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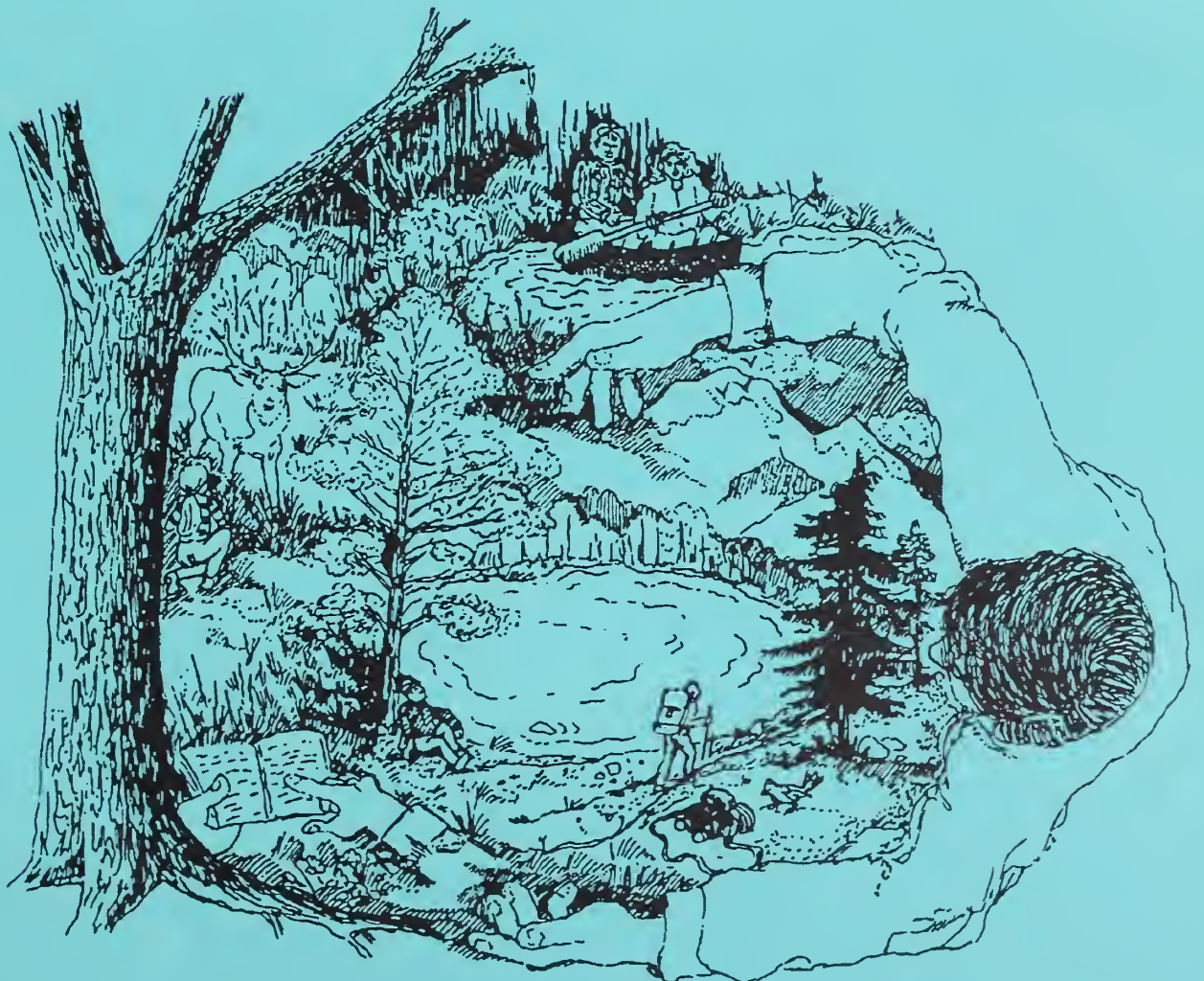scientific knowledge, policies, or practices.

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**Rocky Mountain
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**General Technical
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The Use of Wilderness for Personal Growth, Therapy, and Education

Preface

The papers in this report were selected from those presented at the Symposium on the use of Wilderness for Personal Growth, Therapy, and Education at the 4th World Wilderness Congress in Estes Park, Colorado, on September 14-18, 1987. The National Outdoor Leadership School in Lander, Wyoming provided valuable assistance.

The Use of Wilderness for Personal Growth, Therapy, and Education

A. T. Easley, Joseph F. Passineau, and B. L. Driver, compilers[1]

[1] Respectively, the coordinators are with Sir Sandford Fleming College, Lindsay, Ontario; the Central Wisconsin Environmental Station in Amherst Junction, WI.; and the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station in Fort Collins, CO.

Contents

Introductory Comments On The Benefits Of Wilderness

B.L. Driver, A.T. Easley and
Joseph F. Passineau

Abstract.—This General Technical Report presents a group of papers that discuss a subset of wilderness-related benefits—those pertaining to the use of wilderness for personal growth, therapy, and education. Specific objectives of this introductory paper are to establish some terminology and explain why information on all wilderness-related benefits is needed and why it is presently so limited. We take a broad perspective and do not limit our attention to the three types of benefits targeted by the papers in this report. The paper explains the complexities of attempting to define and measure the magnitudes of wilderness-related benefits. We raise some methodological issues and propose needed research directions before introducing the other papers in this report.

It Must Have Value

Many resource economists now write about "existence demand" or willingness to pay to preserve a particular entity, whether a species or a tract of land (Peterson and Swanson 1988). Their works are helping document the value of wilderness (Walsh et al. 1984). Nevertheless, many economists persist in treating positive human valuation of wilderness preservation as a recent phenomenon. Some even attribute that concept of valuation to Krutilla's seminal (1967) article. For example, Freeman and Kopp (1989:5) state "...it has been recognized *at least since* John Krutilla's pioneering article...(...1967), that environmental services *could* be valued by people who do not make direct use of them...." [emphasis added]. Interestingly, the 1967 article was written after passage of the 1964 Wilderness Preservation Act and many decades after formal designation of "wilderness," "logless," "roadless," and "primitive" areas by the USDA Forest Service in the

1930's and creation of Yellowstone National Park in 1872 to preserve its natural features. In fact, one can trace positive valuations of the existence of wildlands to before the writings of Thoreau (1854), George Marsh (1864), Muir (1916), Robert Marshall (1930), and Aldo Leopold (1949). Even earlier, far eastern philosophers reflected on both the on-site and off-site appreciation of natural settings to promote balance and harmony in one's life. Although it is difficult to establish temporal dimensions, we know too that aboriginals in North America, Africa, New Zealand, and Australia have, over the course of 40,000 years, used natural-area phenomena and symbols to guide much of their spiritual and other normative postures. As one example, many wild animals were used to set norms of human behavior and were worshiped as gods. In conclusion, it can safely be concluded that the presence/existence of relatively undisturbed wildlands has been valued positively by humans for many thousands of years.

If tangible evidence of value is desired, we need only reflect momentarily on the fact that in the United States roughly 90 million acres of land have been designated as wilderness under the 1964 Wilderness Act (PL 88-577). If we assume that society

collectively is reasonably rational in its political allocation decisions, preservation of this large acreage must be construed to denote considerable positive value. Alternatively, many public surveys have shown that strong majorities of respondents favored preservation of wilderness (defined differently in the various studies) and expressed willingness to pay taxes in support of such (Opinion Research Corporation 1977, Wallwork 1984, Young and Fry 1979). Many economic studies have estimated the magnitude of this willingness to pay for wilderness preservation (Walsh and Gilliam 1982, Walsh et al. 1984, Walsh et al. 1985).

The issue is not whether wilderness has provided positive benefits of some value. Instead, the questions are: What are the specific dimensions or nature of wilderness-related benefits? Of what extent and magnitude are those benefits? Of what relative importance are they? Why should we care about these issues? Those questions will be addressed briefly, but not necessarily in the order given, after we establish some definitions.

Terminology

The word "wilderness" is used by different people to mean different

[1]Respectively, the authors are with the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station in Fort Collins, CO; Sir Sanford Fleming College, Lindsay, Ontario, and the Central Wisconsin Environment Station in Amherst Junction, WI.

things; some limit usage to areas designated under the 1964 Wilderness Act, and others use it in reference to practically any natural area. Multiple definitions hold, too, for the words "value" and "benefit." To reduce confusion, we will establish our uses of those words.

Wilderness

Abstractly, wilderness has been perceived as a state of mind (Nash 1982). More concretely, we will use that word to denote relatively large natural areas that are neither easily accessible nor frequently used by motorized vehicles, where opportunities exist for primitive types of recreation, and past and current human activities are not readily apparent (Driver et al. 1987). In the United States, this includes, but is not limited to, areas designated under the 1964 Wilderness Act.

Benefit

In public agency impact assessment handbooks, the word "benefit" is used in several confusing ways. Economists concerned with testing the economic efficiency of a proposed development by some type of benefit-cost analyses, use the word "benefit" to refer to a willingness to pay to obtain the goods or services or the compensation demanded to give up the goods or services that will be affected by the proposed allocation being evaluated. The objective is to determine if an increase in net economic welfare will result from the changes in goods and services caused by the proposed development (Randall 1984).

Other economists concerned with so-called regional economics or developmental impacts use the word benefit in reference to regional increases in income or employment (or other variables such as value added)

that are estimated to accrue to a particular region from a proposed development or action (Alward 1986).

Scientists from other disciplines view a benefit simply as an improved condition or a gain—a desirable consequence—of some type that accrues either to individuals, groups, or society, with the particular type of gains specified clearly. The economic multipliers computed by regional economists would fit within this definition. Measures of willingness to pay and compensation demanded would not, except when expressed as a potential Pareto improvement which is a *net* difference between aggregated measures of monetary worth of the goods or services affected by the project being evaluated minus the costs associated with providing those goods and services (Randall 1984).

Put more simply and technically, a potential Pareto improvement does denote a gain, but the separate measures of willingness to pay or compensation demanded in actuality indicate the *worth* (usually operationalized in monetary terms) of a good or service, with this worth being an economic index of the gains or benefits (utility) expected if the good or service is used. (See Driver and Burch (1988), Driver (1989), Peterson et al. (in press), Schreyer and Driver (in press) for an elaboration.)

Both the "economic efficiency" and "improved condition" definitions of the word benefit serve different purposes. For the purposes of this paper, we will use the "improved condition" definition. Within that perspective, numerous personal, social, and even environmental benefits can be attributed to wilderness. Included are maintenance or betterment of physical fitness, enhanced appreciation and understanding of natural processes, satisfactions realized from being good stewards. Benefits of this type are the foundation of earlier persuasive writings of Muir (1916), Marshall (1930), and Leopold (1949) as well as other fore-

fathers of the wilderness movement. These benefits and other probable improvements are also discussed in treatises on wilderness thought (Nash 1982) and other papers by Ewert (1986) and Driver at al. (1987).

Value

According to Boulding (1956:1), "the word 'value' occurs in economic writing with high frequency, the frequency of meanings being about as great as the frequency of occurrence." This holds for noneconomic writing too. For example, the word "value" is used to denote a mathematical quantity, as the value of pi is 3.14. Artists use "value" to refer to how light or dark particular colors are. That word is also used relationally as when one refers to the negative value of electrons and the positive value of protons.

Brown (1984) clarifies two uses of the word value in evaluation and valuation efforts. One, which he calls "held" values, refers to preference states defined by judgments that one thing is held to be better, more desirable, or otherwise preferred over another. Thus, honesty can be held "to be the best policy," I prefer chocolate to vanilla, political candidate X is preferred to Y, or some might hold the value that "in wildness is the preservation of man." All held values reflect some appraisal of comparative benefits; those things held in higher regard are preferentially judged to be the most beneficial within the context of that judgment. A different context can lead to different judgments even by the same person.

Brown's second concept of value, "assigned value," is the one generally applied when reference is being made to the valuation of a proposed project, such as expansion of the Wilderness Preservation System. The key word here is "assigned," which means that some index of *relative worth or relative importance* is assigned the object that is "held" to be valu-

able. Market prices are the best example of assigned values, but other measures, such as ratings of relative importance on an ordinal response scale, also are commonly used. In the rest of this paper, we will use the word value with the modifier held" or "assigned" as described by Brown.

Knowledge

A theme of this paper is that there is too little scientifically documented knowledge of the benefits of wilderness, where particular benefits have been clearly specified and the scope and magnitude of those benefits have been empirically quantified reliably and validly (accurately). Nevertheless, many people "just know" that wilderness is beneficial. This dichotomy indicates that several types of knowing exist, ranging from objective scientific knowledge, through subjective informed judgment and intuition, to "knowing in one's heart." Scientific knowledge is characterized by objective tests of reliability and accuracy/validity and, hopefully, is factual. It is reliable if replications of the same study/experimental design give consistent results. Validity refers to the results being on target, much like hitting the bull's eye; they measure accurately what is purported to be measured. Of course, since most findings are probabilistic, the accuracy is bounded by varying degrees of variance which should be specified. In contrast, both informed judgment and intuition reflect understanding based on some combination of systematic evidence and subjective filtering. Thus, there is frequently considerable variation in judgments and intuitions between individuals. As used here, "knowing in one's heart" is primarily effective. Between these types of knowledge are gradations characterized by the relative amount of systematic evidence present. For example, many people with good

judgment are adept at gathering and processing data objectively without a formal research design before they filter it through their belief systems.

We recognize that most knowledge about the benefits of wilderness has not been derived from systematic scientific research. Furthermore, many supporters of wilderness preservation know in their hearts that their beliefs about wilderness are right and proper. We do not demean those types of understandings and in no way limit ourselves to the posture that all knowledge should be derived from science. But we firmly believe that more scientifically based information about wilderness-related benefits is needed and that the need continues to increase over time.

Why More Research?

One could argue that the wilderness-preservation/maintenance movement in the United States and worldwide has been advanced considerably more by popular sentiment that is not totally substantiated by scientific "fact" than by the results of scientific studies on the benefits of wilderness preservation. Of course these sentiments have been strongly influenced by scholars such as Thoreau (1854), Marsh (1864), Muir (1916), Marshall (1930), and Leopold (1947). Nevertheless, the point can still be made that scientific research, while helpful, cannot be called the keystone of the political movement for wilderness maintenance and preservation. This is not just speculation—there is a severe paucity of research on certain types of benefits of wilderness.

Given the past history and reasonable success of the wilderness movement—at least in the United States—without science at the center, one can ask why is more research needed? Several reasons will be further developed in answer to that question, some of which have been outlined elsewhere (Driver et al. 1987).

Enhance Basic Resource Allocation Decisionmaking

Public policymakers have always had to balance the relative advantages and disadvantages of alternative uses of a nation's scarce resources. This task has become more difficult and of increased social significance as use pressures have grown in variety and increased in magnitude. Some of the causes of this increasing relative resource scarcity are the same across different countries, while other causes vary in significance from country to country. In the developing countries, rapid population growth and emphasis on economic development each dictate that sound arguments—backed by credible analysis including scientific research—be put forward in the policy arena to justify wilderness. While population growth has increased demands for alternative-to-wilderness uses in the developed countries too, other forces (increasing income, concerns about economic growth, growing demands for competing government services, concerns about environmental quality) now make the basic allocation decisionmaking more difficult in those countries than they were at earlier times when there were more resources to go around. Better information is therefore needed on the "benefits and costs" of all alternative uses. Certainly informed intuition and public sentiment about the benefits of wilderness will continue to play a central role in justifying basic allocations for conservation and preservation. Nevertheless, the need for the results of systematic research on these benefits will continue to grow as use pressures expand in kind and magnitude.

Some examples might be helpful. Research has helped establish the importance of maintaining undisturbed natural laboratories to aid in understanding the basic principles of ecology. Some research has also documented the utilitarian benefits of species preservation in providing

natural sources of medicines, improved varieties of agricultural seeds, and new industrial products (Myers 1979). Recent advances in genetic engineering foretell additional discoveries of the benefits of preserving gene pools (Weaver 1984). Furthermore, as research documents the therapeutic and other benefits of wilderness, a better picture is gained of the total benefits. Additional empirical research should also help define even more clearly the sizable scope and intensity of positive sentiments about wilderness, which will continue to strengthen the case for preservation. Lastly, it is our judgment that many wilderness-related benefits are now poorly defined and, much less well quantified—some benefits are even yet to be identified.

Focus Management Directions

Once basic allocation decisions have favored wilderness, results of the benefits research can be used to help manage those resources. The results can be used to establish management objectives and prescriptions geared toward the provision of particular benefits. The proposed research will both help determine those benefits and determine their resource dependencies. This information can then be used to assure that the resources on which those benefits are dependent will be managed in a way that is consistent with the realization of those benefits. Such information might range from better definitions of the habitat requirements of particular species to the types of settings needed to realize certain types of wilderness-related benefits to humans such as enhanced sense of self-sufficiency and increased learning about natural phenomena.

Identify Substitutes

As the pressures on wilderness increase, it is important to know

which benefits are uniquely dependent on wilderness and which are not uniquely dependent but for which there are strong preferences that they be realized in wilderness. In addition, knowledge is needed about other benefits that are neither uniquely dependent on wilderness nor for which strong preferences exist that they be realized in wilderness. Presumably, society will want as a first priority to protect options to provide those benefits that are uniquely dependent on wilderness, assuming there is a willingness to pay taxes and/or user fees to realize these benefits and that they can be provided efficiently without unacceptable environmental impact. Within the bounds of these same assumptions, those benefits that are highly preferred but not dependent on wilderness are also a legitimate demand in a pluralistic democracy. Too frequently, we hear the argument that wilderness can only be justified in terms of uniquely dependent benefits. This is nonsense in any society within which freedom of choice is a centrally held value. Research can help identify these types of dependencies and preferences and in the process disclose those benefits currently being sought in wilderness that can satisfactorily be provided in substitute areas.

Understand Values of Off-Site Users

Several studies have shown that in the United States the number of off-site "users" (appreciators and supporters) of wilderness exceed the number of on-site users by several orders of magnitude (Opinion Research Corporation 1977, Young and Fry 1979, Young 1980, Wallwork 1984). Thus, the benefits of wilderness extend beyond the on-site user and include utilitarian concerns such as the production of products dependent on the preservation of germ plasm (Walsh 1981). Continued im-

provement in systematically defining and measuring the benefits to the "off-site" user will facilitate better decisionmaking by those off-site supporters, and also by the on-site users, of wilderness. Improved definitions and measurement of benefits can also change the perspectives of protagonists for alternative-to-wilderness allocations.

Improve Quality of Decisions of On-Site Users

In our view, humans behave reasonably rationally in their own best interest. Moreover, humans have probably depended more on information processing abilities than other animals for their evolutionary survival (Kaplan and Kaplan 1978). They not only seek and use, but need, accurate information. Thus, it is human nature that reliable and valid information will contribute to better decisionmaking—perhaps with a time lag. Within this context, information on the benefits of wilderness use will lead to enhanced decisions of the on-site users too. They will simply know better how alternative uses of wilderness will benefit them (and the environment) the most, just as improved information about the benefits of using seat belts, not smoking, and concern about abnormal blood lipid levels have benefited sovereign consumers of other goods and services.

Guide User Fees

Trends exist in all the developed countries for users of public goods and services to pay, in the form of user fees, a larger share of the public costs of providing those goods and services than they have in the past, while recognizing that some portion of those costs must also be covered by general taxation because of the general social benefits created (Driver and Koch 1986). (On the

other hand, there is a trend for the costs of social diseconomies—or "bads" such as pollution—to be borne by those who cause those adverse impacts.) One principle guiding the apportionment of costs to users is that the beneficiaries of public goods and services should pay their fair share.

The problem has been one of identifying those beneficiaries. Research on the benefits of wilderness will help provide that information for the off- and on-site users of those resources. Perhaps such research will also better identify those benefits to society at large that should be supported by public taxation. An example might be a widespread belief that a society is wrongheaded that does not care about good stewardship or preserving options of choice for future generations.

Advance Wilderness-Related Professions

Contrasted with a trade or craft, the most distinctive characteristic of a profession or academic discipline is an empirically supported body of knowledge. Thus, research on wilderness benefits will advance wilderness-related professional bodies of knowledge. A side benefit will be increased pride and motivation of those professionals and the attraction of "better minds" to those professions. These advances should, over time, result in improved policy and management decisions.

Improve Educational Efforts

In a democratic society, sound decisions regarding the preservation and use of wilderness areas and the protection of environmental quality, depend on a citizenry that is knowledgeable, skilled, and involved. Such a citizenry must know about natural and human environments and related problems, be aware of skills

with which to solve these problems, and be motivated to participate in problem solving and decision making activities. Over the past half century, efforts in conservation, environmental, and wilderness education have fostered environmental awareness, sensitivity, skills, and ethical behavior (Tbilisi Declaration 1977).

As society becomes increasingly aware of social-environmental issues, the need also increases for research regarding the effectiveness, limitations, and benefits of wilderness-related educational programs. Research needs in this area range from determining the most effective program for promoting low-impact camping skills; through development of theoretical models of moral development, personal and political action, and social change; to measurement of the benefits of education, such as nurturing an environmental ethic and a sound wilderness philosophy. Wilderness education research must, therefore, be holistic and work in concert with existing environmental education networks as well as outdoor leadership and human resource development efforts (Bacon and Thompson 1988, Hendee and Brown 1988, Ratz 1988).

Promote a Sound Wilderness Philosophy

Perhaps one of the greatest advantages of additional research on wilderness benefits is that it is essential if we are to develop a sounder wilderness philosophy. The need for a "wilderness philosophy" has been described elsewhere (Driver et al. 1987: 294-295).

...this term [wilderness philosophy] signifies the underlying principles or values upon which the defense of wilderness can be built.

A sound and widely accepted philosophy has been notably absent in the American preser-

vation movement, which can be characterized largely by a series of highly subjective defenses of particular places: "Save Hetch Hetchy," "Save the Redwoods," "Save Grand Canyon." If someone asked, "Why?", the reply was that it is the Grand Canyon, for Pete's sake! But still, why save it, why keep it wild? "Well," the preservationists traditionally retorted, "we like it wild." But their interrogator might persist, again, with the question, "Why?" The point is that wilderness appreciation has been a creed, a faith, something that was almost sullied by analysis and discussion, something you felt in your bones. But that is not good enough, especially when the existence of wilderness is challenged by deep-rooted materialism.

There is a need for a systematic articulation of wilderness benefits based not only on objective scientific research but also on historical fact and contemporary experience, including nonhuman values. This is what we mean by a philosophy of wilderness. It must lie behind the defense of particular wild places like the philosophy of human dignity and freedom lies behind the protest of racist policies. Philosophers have spent 24 centuries, since the Greek democracies, setting forth a philosophy of liberty. So, when Thomas Jefferson declared that all men were created equal, when Lincoln emancipated the slaves, or when contemporary Americans say that South Africa's apartheid is wrong, few ask why. But the value or benefit of wilderness is not nearly so well established.

Following a comprehensive discussion of a wide variety of known and probable wilderness-related benefits, Driver et al. (1987:314) speculated about which types of benefits are most relevant to a wilderness philosophy. Their conclusions were as follows:

Of the many types of wilderness benefits we described, six seem to us to represent the core of a wilderness philosophy. Each is wilderness-dependent, historically valid, shaped by an understanding both of the realities of wilderness and of the needs of civilization, and intuitively clear (with the possible exception of the last one listed). They are:

1. Preservation of representative national ecosystems and maintenance of species diversity as laboratories for links with the past, learning, and scientific research, and as models for appreciating the complex, interactive, supportive, and competitive forces that maintain life without the need for human assistance.

2. Spiritual values that capture the themes of natural cathedrals, understanding unity and continuity, celebrating the creative forces behind life, and realizing the spiritually sustaining and cleansing powers of natural areas.

3. Esthetic values that go beyond scenic beauty to the sublime—to the notions of awesomeness, majesty and overwhelming esthetic impact.

4. Inherent/intrinsic values which, if they do not adequately articulate, at least gently hypothesize that nonhuman organisms have

their places on Earth and that perhaps even inanimate objects have the right to exist. Wilderness preservation, as a

form of restraint, helps temper the tendency of aggressive humankind to conquer and subdue the entire Earth.

Table 1.—Taxonomy of wilderness benefits.[a]

I. Personal benefits (accruing primarily to individuals; might or might not benefit society at large)
  A. Developmental (desired changes in self-concepts and skills)
    1. Self-concept
    2. Self-actualization
    3. Skill development
  B. Therapeutic/healing
    1. Clinical
    2. Nonclinical (stress mediation/coping)
  C. Physical health
  D. Self-sufficiency
  E. Social identity and bonding (development/maintenance of desired social relations with family and others)
  F. Educational
  G. Spiritual
  H. Esthetic/creativity
  I. Symbolic (benefits from options to realize that actions are being taken in support of preservation-related beliefs)
    1. Resource stewardship
    2. Anti-anthropocentricism/moralistic
    3. Option demands
    4. Other
  J. Other wilderness recreation-related benefits to individuals
  K. Commodity-related (benefits to individuals from goods produced from wilderness such as those related to water and to grazing by domestic animals)
  L. Nurturance

II. Social benefits (accruing across individuals to society collectively or to large segments of society)
  A. Aggregate personal benefits
  B. Spinoff benefits
  C. Historical cultural benefits
  D. Preservation-related benefits
    1. Representative ecosystems
    2. Species diversity
    3. Air visibility
    4. Unique landforms, including areas of outstanding scenic beauty
    5. Historic sites
    6. Educational values
    7. Scientific laboratory
    8. Stewardship (option for future generations)
  E. Quality of life
  F. Commodity uses (water, minerals, grazing, etc.)
  G. Economic benefits
    1. National economic development
    2. Local/regional economic development

III. Inherent/intrinsic (benefits to nonhuman organisms)

[a]Source: Driver et al. 1987: 298.

5. Historical and current cultural values nurtured by wilderness, such as freedom, pride in one's nation's material bounty and splendor, creative inspiration, and maintenance of a part of the past out of respect for what has been.

6. Specific types of recreational use that depend on wilderness settings, including the quest for self-sufficiency, particular types of challenge and skill-testing, and recreation and therapeutic benefits related to being in a tranquil, serene, primitive area with few other people around.

...Although research is needed on all benefits, greater attention is particularly needed on the six central values, even though they are the most difficult to quantify.

Other people might offer different benefit themes as central to a wilderness philosophy. But the point stands, the accomplishment of that objective is dependent on much additional scientific inquiry on wilderness-related benefits.

State of Knowledge

The state of knowledge about wilderness benefits is described in considerable detail in Driver, Nash and Haas (1987). That report concluded that even though there was widespread appreciation that wilderness provides a vast array of different types of benefits of considerable magnitude, there was a paucity of systematic documentation of the extent and magnitude of most of those benefits; much of what we know is intuitive and rather "soft" scientifically. With that qualification established, Driver et al. (1987) established the taxonomy of wilderness benefits

shown in table 1 and then described what is known about each benefit listed. Note that the papers in this report on the use of wilderness for personal growth, therapy, and education all fall within the first category—Personal Benefits—listed in that taxonomy.

Other recent reports also address the benefits of wilderness specifically (Manning 1988) or of wildlands in general (Kelly 1981, Driver and Peterson 1986 (compilers of the 11 papers on outdoor recreation benefits in the "values section" of the Literature Synthesis produced by the President's Commission on American Outdoors 1987), Schreyer and Driver, in press). These reports go into greater depth and elaborate some dimensions of the benefits listed in table 1, but they add few if any benefits to that list.

These references all show that a wide variety of benefits probably exist. Additional research, such as the results presented in the research-based papers in this report, is needed to make definitive statements regarding their scope and magnitude. These references also offer reasons for the limited research that has been done on wilderness benefits.

- The concept of benefit has not been articulated well as a topic for research and has been articulated best in terms of the economic measures (described at the beginning of this paper) that are used in benefit-cost analyses to test for economic efficiency.

- The topic of wilderness benefits has not had high social/ institutional priority, given the dominance of other public concerns such as national defense, education, general welfare, medical services, and environmental pollution.

- The Protestant work ethic that prevails in the United States has de-emphasized

research on the benefits of amenities.

- Most studies have focused on outdoor recreation in general and not wilderness.

- The research is complex.

- Only a small cadre of scientists exists with interest in the topic and expertise to do high quality research.

Research Needs

For adequate high quality research on wilderness benefits to be conducted, several things need to happen within and outside the research community.

Within the Research Community

Scientists interested in this area of research need better understanding of: the concept of benefit as an improved condition or a desirable consequence; how that concept differs from that of valuation; and the logical phases of amenity benefits research. Elsewhere (Peterson et al., in press; Driver and Burch 1988), we propose the following three phases for the benefits research:

1. Qualification

2. Quantification

3. Valuation.

The first, qualitative analysis, is fundamental to all science as a variable-definition phase. Here, clear specification of particular types of benefits must be obtained while realizing that the context is important (Brown 1984) and that the scientist must accept responsibility for specifying a particular entity as a particular type of benefit. This phase will require considerable familiarity with the literature. Also, considerable

qualitative research (using focus groups and other approaches such as phenomenological studies) must frequently be done just to define the benefit being hypothesized for a particular class of on- or off-site user and to establish the variables and their parameters, which will be needed to accomplish the second phase—quantifying the magnitude of the specified benefit. For example, if reduction of hypertension is specified as a possible benefit, then the unit of measure (decrease in systolic or diastolic blood pressure) and its parameter (how much decrease and from what level) must be specified clearly.

In the second phase, quantification measures the magnitude of change in the variables that were specified in the qualitative phase. Quantificative analysis also requires ability both to predict the magnitude of any beneficial change and to explain why that change occurred.

Valuation during the third phase has nothing to do with measuring the magnitude of a particular type of benefit but instead establishes the relative worth and importance of that change. Monetary measures of willingness to pay for that change are the best known measures of relative worth but other monetary (time spent, willingness to trade off other personal economic resources to realize the benefit) and nonmonetary measures (ratings on an ordinal scale) can be used.

Better understanding of these three separate phases of the benefits research will contribute substantially both to improved designs and to reducing confusing and misguided arguments.

Many scientists need to get off "the kick" that there is a conflict between qualitative and quantitative analyses. All quantitative analyses are based on preliminary qualitative analyses, and many so-called qualitative analyses using phenomenological and other approaches quantify to some extent, even if only on a "did"

and "did not" basis. We see little evidence that Comtian logical positivism is the norm of most quantitatively oriented scientists. We share the concern of many that improperly designed quantitative studies can misdirect the respondent's responses and that reductionism can overlook important actions and interactions. But science must ultimately have direction and establish controls. In sum, the issue is not either qualitative or quantitative analyses but a good balance of both.

Considerably more attention needs to be given to observations of beneficial changes in behavior. These observations will establish "harder" empirical bases of knowledge about benefits than the introspective measures do. Behavioral-change measures include desirable physiological changes as well as other performance criteria such as improved academic performance, greater involvement in conservation activities, and demonstrative social bonding of many types. Of course, not all benefits can be quantified by using observations of behavior, so introspective studies are needed also to identify magnitudes of perceived benefits. It is important, however, that those introspective measures focus directly on a clearly specified beneficial condition, such as improved physical fitness, rather than indirectly on some construct, such as exercising, from which inferences must be made to benefits. One reason much of our knowledge about wilderness-related benefits is so probabilistic is that most past research has employed indirect, introspective measures addressing constructs such as motivations and experience preferences. This research has been useful in describing recreation behavior and in enhancing inferences about probable benefits, but the direct introspective measures will be of considerably more value. They require the scientist to do careful qualitative analyses and to clearly define the hypothesized benefits.

More attention needs to be directed to the benefits perceived and realized by the off-site users who, as mentioned previously, greatly outnumber the on-site ones. Extremely little benefits research has been done on those users primarily because of the difficulty of the task.

More sophisticated research designs are needed, especially experimental designs with control groups. Longitudinal studies are also needed to track persistence of benefits over time, as are replications of the same design in time and space to test for consistency of response and to test for patterns.

More studies need to go beyond description and focus more explicitly on prediction and explanation, including more modeling with clear mathematical notation and definition of variables and their parameters.

The expertise of more disciplines needs to be brought to the tasks, especially the research skills of scientists well trained in making physiological measures. Fortunately, many of the papers in this report reflect these improved directions.

Changes in Institutions

For the wilderness benefits research to proceed optimally and be accepted appropriately, several changes are needed in both scientific and nonscientific institutions (Schreyer and Driver, in press).

First, changes are needed in the perspectives of wilderness-related professionals. The main problem is the pervasive mind-set that the benefits cannot be identified, quantified, and valued. Certainly, those tasks are complex, are each broad in scope, will take time, and the research will be costly. But these are insufficient reasons not to try. By analogy, the medical sciences had even greater obstacles to overcome, but they have made tremendous progress the past 100 years despite the fact there are health-related problems yet to solve.

Second, changes are also needed within the wilderness-related public agencies. They too frequently have nearsighted vision and take a crisis/reactive approach, emphasizing the here and now, rather than adopting a broader perspective oriented to their fundamental long-term task of providing opportunities to create benefits to individuals and society. To wit, management objectives are generally defined in terms of physical entities, such as so many acres protected and so many recreation visitor days provided, rather than addressing the more fundamental questions of what benefit opportunities should be provided where, for whom, when, and how? This is understandable, but management objectives and prescriptions for action can be specified in both behavioral and physical terms, and they should be.

A third management agency problem is the inequitable institutional recognition and reward given wilderness-related professionals. Many agencies do not recognize these personnel as professionals; they have no professional position classification standards for them, and those agencies generally do not offer them career advancement opportunities equivalent to those offered their fellow employees holding other professional positions.

Fourth, other social institutions need to better support the benefits research by providing more funding and related support. This includes public and private organizations as well as wilderness interest/support groups such as the Wilderness Society and the Sierra Club.

Subsequent Papers

The other 26 papers in this research report make a substantive contribution to knowledge about wilderness benefits, especially those benefits related to personal growth, therapy, and education. Most of the papers are original contributions,

with 14 of the 26 offering empirically documented results. These empirical studies represent different research approaches, both qualitative and quantitative, and they include both physiological and other measures of observable behavior. Six of the other papers offer systematic reviews of particular topics, and the remaining six are best described as descriptions of wilderness-related phenomena.

The papers are grouped into three categories reflecting their orientations and consider the contribution of wilderness and its use to (1) personal growth, development, and social bonding, (2) therapeutic benefits, and (3) environmental awareness and wilderness education. Each group offers new knowledge and insights and raises questions that certainly will stimulate further study.

The appendix comprises five papers that reflect less of a research orientation and are either philosophical in nature or describe particular wilderness-related programs.

References

Alward, Gregory S. 1986. Local and regional economic impacts of outdoor recreation development. In: A Literature Review. President's Commission on Americans Outdoors, Values. Washington, D.C: Government Printing Office: 47–57.

Bacon, S.; Thompson, D. 1988. Outward Bound USA. In: Martin V., ed. For the conservation of earth. Golden, CO: Fulcrum, Inc.

Boulding, Kenneth. 1956. Some contributions of economics to the general theory of value. Philosophy of Science. 23(1): 1-14.

Brown, Thomas C. 1984. The concept of value in resource allocation. Land Economics. 60(3): 231-246.

Driver, B. L.; Koch, Niels E. 1986. Cross-cultural trends in user fees charged at national outdoor recreation areas. In: Proceedings, 18th IUFRO World Congress, Division 6, General Subjects. Ljublijana, Yu-

goslavia: IUFRO Organizing Committee: 370-385.

Driver, B. L.; Peterson, George L., comps. 1986. Values section of a literature review. President's Commission on Americans Outdoors. Washington, DC: Government Printing Office.

Driver, B. L.; Nash, Roderick; Haas, Glenn E. 1987. Wilderness benefits: A state-of-knowledge review. In: Proceedings—National wilderness research conference: Issues, state-of-knowledge, future directions. Gen. Tech. Rep. INT-220. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station: 294–319.

Driver, B. L.; Burch, William R., Jr. 1988. A framework for more comprehensive valuations of public amenity goods and services. In: Peterson, George L.; Driver, B. L.; Gregory, Robin Gregory, eds. Amenity resource valuation: Integrating economics with other disciplines. State College, PA: Venture Publishing, Inc: 31-45.

Driver, B. L. 1989. What are they, how big are they, and what are they worth: Some ideas on recreation benefits. In: McDonald, Cary, ed. Proceedings, 1988 southeastern recreation researchers conference. Vol. 10. Athens, GA: Institute for Behavioral Research, University of Georgia: 7-20.

Ewert, A. 1986. Values, benefits and consequences in outdoor recreation. Values. In: A literature review: President's commission on Americans outdoors, values. Washington, DC: Government Printing Office: 71-80.

Freeman, A. Myrick, III; Kopp, Raymond J. 1989. Assessing damages from the Valdez oil spill. Washington, DC: Resources for the Future. Summer 96: 5-7.

Hendee, J.; Brown, M. 1988. How wilderness facilitates personal growth. In: Martin, V., ed. For the conservation of earth. Golden, CO: Fulcrum, Inc.

Kaplan, Stephen; Kaplan, Rachael, eds. 1978. Humanscape: Environments for people. Belmont, CA: Duxbury Press.

Kelly, John R., ed. 1981. Social benefits of outdoor recreation. Urbana-Champaign, IL: Department of Leisure Studies, University of Illinois.

Krutilla, John. 1967. Conservation reconsidered. American Economic Review. 57: 777-786.

Leopold, Aldo. 1949. Sand County almanac and sketches from here to there. New York: Oxford University Press. 269 p.

Manning, Robert. E. 1988. Social research in wilderness: Man in nature. In: Freilich, Helen R., comp. Wilderness Benchmark 1988: Proceedings of the national wilderness colloquium. Gen. Tech. Rep. SE-51. Ashville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station: 120-132.

Marsh, George. 1864. Man and nature. New York: Scribner. 472 p.

Marshall, Robert. 1930. The problem of the wilderness. Scientific Monthly. 30: 142.

Muir, John. 1916. Our national parks. Boston, MA: Houghton Mifflin Co. 400 p.

Myers, Norman. 1979. The sinking ark: a new look at the problem of disappearing species. Oxford, England: Pergamon Press. 305 p.

Nash, R. 1982. Wilderness and the American mind (3rd ed.). New Haven, CT: Yale University Press.

Opinion Research Corporation. 1977. The public's participation in outdoor activities and attitudes toward national wilderness areas. Report prepared for the American Forest Institute. Princeton, NJ.

Peterson, George L.; Swanson, Cindy Sorg. 1988. Toward the measurement of total economic value. Gen. Tech. Rep. RM-148. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 44 p.

Peterson, George L.; Driver, B. L.; Brown, Perry J. [In press]. The benefits of recreation: dollars and sense. In: Johnson, Rebecca L.; Johnson, Gary V., eds. Economic valuation of natural resources: Issues, theory and applications. Boulder, CO: Westview Press.

Randall, Alan. 1984. Budget cost analysis as an information system. In: Peterson, George L.; Randall, Alan, eds. Valuation of wildland resource benefits. Boulder, CO: Westview Press: 65-75.

Ratz, J. 1988. The National Outdoor Leadership School. In: Martin, V., ed. For the conservation of earth. Golden, CO: Fulcrum, Inc.

Schreyer, Richard; Driver, B. L. [In press]. The benefits of wildland recreation participation: What do we know and where do we go? In: Driver, B. L., comp. Contributions of social scientists to multiple-use management: an update. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

The Tbilisi Declaration. 1977. UNESCO conference on environmental education. In: Engleson, D., ed. A guide to curriculum planning in environmental education. Madison, WI: Wisconsin Department of Public Instruction (1985).

Thoreau, Henry D. 1854. Walden. In: Bode, C., ed. The portable Thoreau. New York: Viking (1947).

Wallwork, S. S. 1984. Montanans and selected wilderness issues. Montana Business Research Quarterly. 22(4): 15-18.

Walsh, John. 1981. Germ plasm resources are losing ground. Science. 214: 421-423.

Walsh, Richard G.; Gilliam, Lynde O. 1982. Benefits of wilderness expansion with excess demand for Indian Peaks. Western Journal of Agricultural Economics. 7(July): 1-12.

Walsh, Richard G.; Loomis, John B.; Gilliam, Richard A. 1984. Valuing option, existence, and bequest demands for wilderness. Land Economics. 60(1): 14-29.

Walsh, Richard G.; Sanders, Larry D.; Loomis, John B. 1985. Wild and scenic river economics: Recreation use and preservation values. Englewood, CO: American Wilderness Alliance: 141 p.

Weaver, Robert L. 1984. Beyond supermouse: Changing life's genetic blueprint. National Geographic. 166(6): 818-847.

Young, Robert A.; Fry, B. 1979. Wilderness: do Illinoisans approve? Champaign, IL: University of Illinois, Illinois Research. 12 p.

Young, Robert A. 1980. The relationship between information levels and environmental approval of the wilderness issue. Journal of Environmental Education. 11(3): 25-30.

The Wilderness Experience: A Psychological Evaluation of Its Components and Dynamics

Lea M. Scherl[1]

Abstract.—This paper presents a proposed taxonomy of the different experiential domains of a wilderness experience and discusses the process of a structured wilderness experience. The taxonomy was derived from, and validated against, participants' own reports and appraisals of their experience while on Australian Adult Outward Bound programs. The methods of generating and analyzing "meaning-based" data are mentioned. The process of the experience is elucidated by looking at how participants' perceptions of the different domains change during the program. Relationships among these experiential domains are also explored.

This paper will concentrate on the presentation of a research perspective and some research results of a project I have been conducting over the past few years. Comments on the state of knowledge in this area and detailed discussion of the results obtained here, in light of other studies, will be kept to a minimum.

This work has drawn heavily upon the psychological literature in which it is often claimed that wilderness experiences are psychologically beneficial to individuals. This conclusion, when the study was devised (1982), arose primarily from studies adopting a pre-post experience test design aimed at quantifying changes within the individual. Central concepts used to describe change were largely related to the "self" (e.g., self-concept, self-esteem, self-satisfaction, self-awareness).

Notwithstanding the heavy focus on "self" as a research variable, most studies ironically ignore detailed consideration of the individual's affective states, perceptions, and cognitions associated with wilderness experiences (i.e., a more descriptive stage to research). Also, research in this area has not adequately answered how and why individuals may change because of a wilderness experience, and very little is known about experiential processes.

[1]Behavioral Sciences Department, James Cook University of North Queensland, North Queensland, Australia.

Statement of Position

The research approach adopted used very few initial assumptions about the nature of a wilderness experience or what indeed was happening to individuals in that context. It sought understanding about the wilderness experience itself, from the perspective of the individuals experiencing it, in a particular situational context.

In this interactionist framework, what was central was not the individual, or the physical, and social environment alone, but the ongoing interaction between both. This interaction is colored by a person's continual appraisal of himself/herself and his/her relationships with the surroundings. In this sense, the wilderness experience is treated as a multifaceted situation. The intentions of this analysis were to:

1. Identify the different domains of a wilderness experience as perceived by participants.

2. Investigate whether some domains are more salient than others.

3. Study the process of change in those perceptions (if any) throughout a stay in wilderness.

4. Explore the relationships among these domains.

Participants and the Context of Data Collection

The research was conducted in the context of Australian Outward Bound programs—one of the many different ways people can choose to visit a wilderness environment. One should be careful, of course, not to generalize the results obtained in that situation to the full range of wilderness experiences; such results, however, can hopefully provide some guidelines for further research.

The data collection, which is the focus of this paper, was carried out in the context of three programs in a wilderness setting. Participants were 41 adults (27 males and 14 females), excluding the researcher who was also a participant in this program. The sample ranged in age from 30 to 53 years (mean = 37) and was predominantly from large cities. Participants voluntarily attended these programs and paid their own way.

Each of these programs lasted 9 days. The first day involved meeting with the group in an urban location and traveling to the entrance of the wilderness area. Once at the wilderness destination, gear was issued, a briefing took place about gear usage and the expedition, participants learned about knots, and planned for food. There were also some group warming-up exercises.

The second day was very long and physically demanding. Participants bush-walked, completed the ropes-

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confidence course, explored a cave, and practiced abseiling (in the USA, the term used is rappelling). The third day, again a very long day, marked the real start of the expedition. That day was devoted to a series of abseils interspersed with walks between abseiling points. The aim was to descend a gorge.

During the fourth day, the abseil descent of the gorge was completed and followed by a long walk from the gorge to a river junction. The fifth day introduced the participants to the experience of rafting, cascading, and living around flowing water. The sixth day was devoted entirely to rafting, and in the afternoon the group split for solo. The seventh day was spent on solo. The eighth day was devoted to rafting until arriving at the expedition exit point. The last day we packed and returned to civilization.

Proposed Taxonomy: Domains and Dynamics of a Wilderness Experience

Devising the Taxonomy

The results presented here relate to the development of a taxonomy of the different domains of a wilderness experience and how this taxonomy was used to look at the processes of this experience.

The data collected in this study included a number of "log books" in which participants recorded their impressions and feelings as the program developed. The contents of the log books were summarized into meaningful categories representing aspects of a particular experience. Content analysis of the log books then provided a means of validating the appropriateness and comprehensiveness of the list of categories used to describe that experience.

This list of categories is referred to here as a proposed taxonomy of the different domains of a wilderness experience. The categories were

originally chosen from the Repertory Grid analysis, the literature in the area, and the researcher's first-hand experience with wilderness settings. The information obtained from the Repertory Grid analysis was instrumental in deriving the taxonomy. Through the Repertory Grid technique (adapted for use in the wilderness situation), participants' constructions or appraisals of their wilderness experiences were obtained.

This technique was based on George Kelly's (1955) Theory of Personal Constructs, which rests on the idea that individuals construe relationships between objects, people, and experiences in terms of bipolar semantic constructs.

In this study, each participant was required to compare a number of experiences they had during the Outward Bound program and provide bipolar labels for these comparisons. These labels were then rated in terms of how appropriate they were in describing each of these experiences. The matrices created were analyzed by a computer program called IN-GRID from the Grid Analysis Package (1981) described in Slater (1977).

This program is based on Principal Component Analysis where the total variance in the data is distributed into amounts reflecting the variation in the different components. Thus, the components are a way to examine the spatial organization of the labels in relation to the experiences.

Through a process of interpreting these different components carried out by a number of judges, a list of wilderness experience domains was obtained. This list was subsequently shortened by grouping these domains into broader categories. This study did not discuss this analysis in depth and the results obtained from it (Scherl, in press).

The taxonomy comprises two sets of categories. The first set is a "superordinate" group of quite general categories. Each of these has several "subordinate" categories, making it a hierarchical framework.

The taxonomy presented in figure 1 and the descriptions of each experiential aspect in table 1 were written as though individuals were in the wilderness describing their experiences. Thus, the experiential domain which refers to *effort*, for instance, is described as, "when you are concentrating on something and/or talking yourself into a difficult task, or when you refer to physical effort." This general category of *effort* is further classified by differentiating between "physical" or "mental" effort.

Procedure for Analysis of the Log Books

The task of coding the contents of the log books and the two-tiered structure of the taxonomy (which provides the categories for the coding) presented problems for traditional coding procedures. Traditional coding procedures allow for membership of content in only one exclusive category or scale. Here, the researcher felt it crucial to permit the categories to "overlap" in the sense that they may apply simultaneously to the same log book entry. In this context, it was also sensible to permit "partial membership" of log book entries in various categories.

The assumptions underlying this analytical procedure were based on Fuzzy Sets theory (Smithson 1987). The approach was consistent with the researcher's perspectives on wilderness experiences (i.e., that they are multi-faceted situations where things happen simultaneously). Thus, each thematic category corresponding to a domain of the wilderness experience was treated here as a "Fuzzy Set." Smithson (1987) noted that, "Fuzzy sets have gradations of set memberships and blurred boundaries, and so they resemble, at first glance, the kinds of categories people use in natural thought or communication."

Four judges were asked to assign the contents of the log books to the

various thematic categories. Assignment of the contents were made to both superordinate and subordinate levels of categories, independently. Inter-judge disagreement indices and a reliability measure (intra-judge agreement) were computed. These revealed a very high level of agreement both within and between judges.[2]
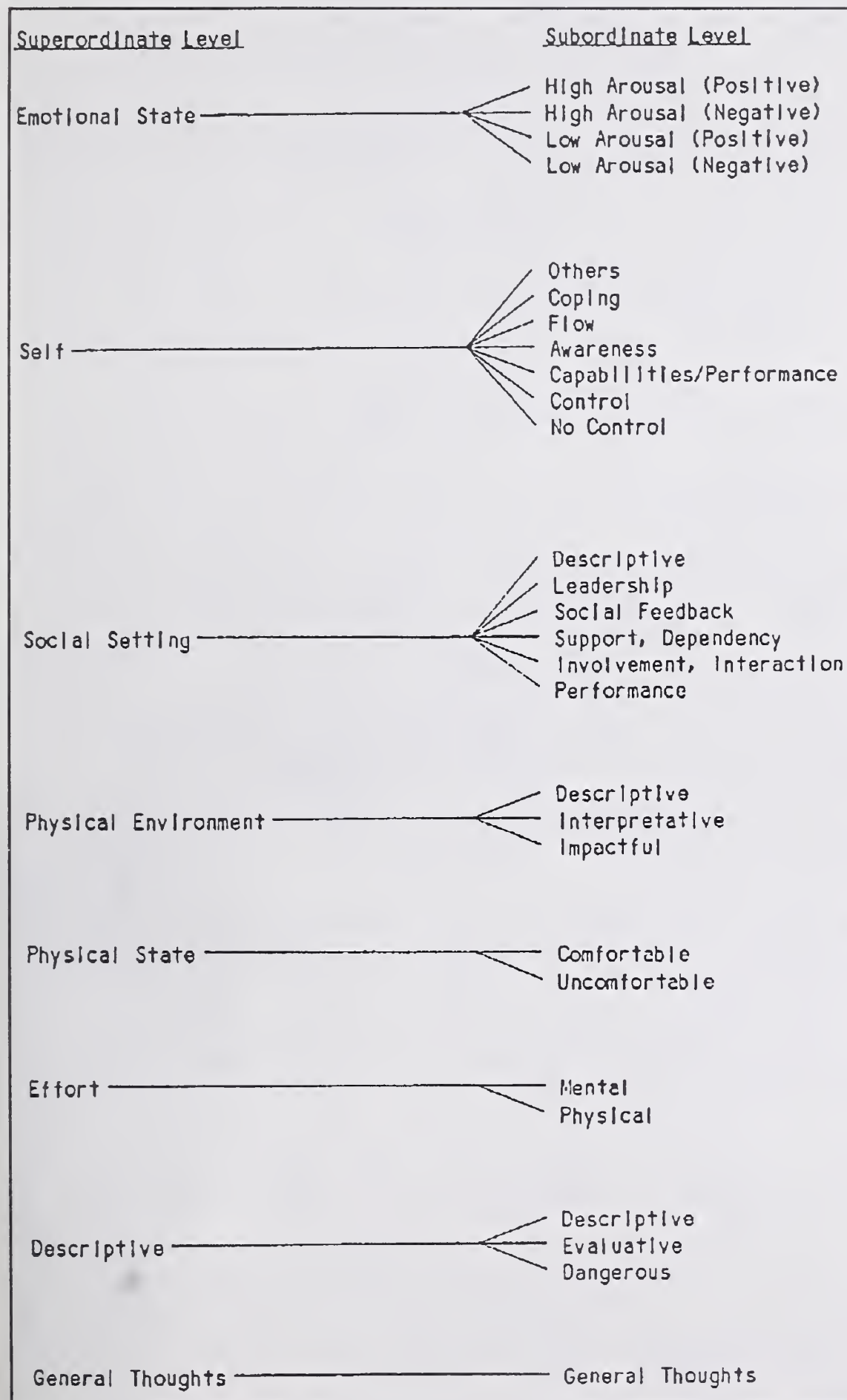
Salient Experiential Domains

Overall, the list of categories in table 1 was found to be quite exhaustive (i.e., it provided a comprehensive listing of the array of experiential domains mentioned by the participants writing their log books. Moreover, there were observable differences in the frequency of usage of these categories with some being used quite often to describe individuals' experiences, while others were rarely used. Tables 2 and 3 present the Relative Frequency (RF) and the percentage of usage for each superordinate and subordinate category.[3] *Description of activities* was used 25% of the time, and *self* referents were used 22% of the time. These were the two most salient categories. If one considers that the description of activities may largely be an artifact of writing log books, the two aspects of the Outward Bound experience that are predominant in the participants' writings are *self* followed by *social settings*. It could be suggested that writing about oneself is also an artifact of writing a log

Superordinate Level   **Subordinate Level**

Emotional State —— High Arousal (Positive)
High Arousal (Negative)
Low Arousal (Positive)
Low Arousal (Negative)

Self —— Others
Coping
Flow
Awareness
Capabilities/Performance
Control
No Control

Social Setting —— Descriptive
Leadership
Social Feedback
Support, Dependency
Involvement, Interaction
Performance

Physical Environment —— Descriptive
Interpretative
Impactful

Physical State —— Comfortable
Uncomfortable

Effort —— Mental
Physical

Descriptive —— Descriptive
Evaluative
Dangerous

General Thoughts —— General Thoughts

Figure 1.—A taxonomy of the different domains of a wilderness experience.

[2]The inter-rater disagreement index and the reliability measure was calculated by using Fuzzy Set programs (Fuzzy 1 and Fuzzy 2, Smithson 1987). Indices vary from 0 to 1, with 1 representing maximum disagreement. The inter-rater index obtained for the overall content analysis was 0.0016, showing a very high level of agreement among judges. The reliability index was obtained on the basis of comparing, for each judge, the recoding of a subsample of the data on another occasion with the original ratings. The reliability index obtained as the average index for the four judges was 0.0047.

[3]Relative frequency is the absolute frequency of usage of a particular category for all the judges divided by four (the number of judges) and multiplied by the median of the score range to account for the different degrees of membership of contents within categories.

Table 1.—Different domains of a wilderness experience (from the perspective of an individual reporting about his/her experience).

Superordinate level

Emotional state.—It refers to your feelings or to the feelings of the group you belong to if it is implicit that you are also feeling that way.

Self.—It refers to cognitive appraisal and/or evaluations or perceptions you have about yourself, about your relationships with the immediate social or physical environmental context.

Social setting.—It refers to another person or a group of people or to your perception of belonging to a group.

Physical environment.—It refers to the physical environment either as a whole or to specific aspects of it.

Physical state.—It refers to your body state or to the group's physical state if it is implicit that you are also feeling that way.

Effort.—When you are concentrating on something and/or talking yourself into a difficult task, or when you refer to a physical effort.

Descriptive.—Merely describing what you are or have been doing, what the group is or has been doing, or a particular incident.

General thoughts.—Things that come to your mind and cannot be placed in the other categories.

Subordinate level

Emotional state

Emotional state—high arousal (positive).—When your feelings are associated with high arousal (i.e., an arousal state that is beyond your optimal level). For example, excitement, euphoria, etc.: "The abseil was exhilarating."

Emotional state—high arousal (negative).—When your feelings are associated with high arousal (i.e., an arousal state that is beyond your optimal level). For example, apprehension, frightening, etc.: "I was afraid of sleeping in the forest."

Emotional state—low arousal (positive).—When your level of arousal is optimal (i.e., you have enough but not excessive stimulation). Also, when you are simply stating an emotion that is not associated with high arousal, or when your level of arousal cannot be inferred. For example, "It is very enjoyable to be here."

Emotional state—low arousal (negative).—When your level of arousal is optimal (i.e., you have enough but not excessive stimulation). Also, when you are simply stating an emotion which is not associated with high arousal or when your level of arousal cannot be inferred. For example, "I feel very sad to leave."

Self

Self (others).—How you view yourself in relationship to others. For example, "I think I get on reasonably well with the people." "I am not as friendly as I could be." "I did it first."

Self (coping).—How you view yourself in relationship to the environment and/or activities you are or have been engaged in. Coping refers to when you have to deal with a situation that might be (or might not be) new to you but that involves challenge, conflict, adaptation, or some demand placed upon you. For example, "I could not seem to master it no matter what." "I fell over again that day." "When I realized what to do the panic disappeared." "It was difficult to climb the hill."

(Continued)

Table 1.—(continued).

Self (flow).—How you view yourself in relationship to the environment and/or activities you are or have been engaged in. "Flow" refers to a state when you perceive yourself as being part of the physical environment and/or in tune with what you are doing, or look forward to something. For example, "I feel part of the place." "I feel at ease with abseiling." "I am looking forward to the day's happenings."

Self (awareness).—When you view yourself in relationship to what you thought you were, or you perceived you were, capable of; this implies that you have discovered something about yourself. Also, when you have been made more aware of your capabilities and/or limitations; when certain considerations about you, which you are not often aware of, suddenly become salient. For example, "I didn't think I would ever back myself down the cliff." "I didn't think I could sleep in the dark bush."

Self (capabilities/performance).—It refers to an assessment of you being able to do something, or it refers to your performance on something (when no comparison with others is made). For example, "I am confident I can do it." "I was not very good at rafting."

Self (control).—It refers to your perceptions of being in control of a situation. For example, "I felt I was in control while abseiling." "I felt at ease with bushwalking."

Self (no control).—It refers to your perceptions of having no control of a situation. For example, "I suddenly lost control of the ropes."

<center>Social setting</center>

Social setting (descriptive).—When you are merely describing others, what they are doing (or another person is doing), or mentioning something they have said. For example, "Group B is preparing dinner." "Jenny confessed to me that she was reluctant about coming."

Social setting (leadership).—When you indicate that another person is instructing or leading you. Within these statements, there sometimes might be a perception that others, not you, are in control of the situation. For example, "We are instructed by..." "We are taken to..."

Social setting (social feedback).—Any interactions with others where you receive feedback about yourself or where you give feedback to others. For example, "Allan made the comment of how organized I was." "I told her it was a good decision."

Social setting (support, dependency).—Making an assessment about the extent to which others are helpful or supportive (i.e., people are construed as resources and/or you perceive some dependency on the group). For example, "I probably owe my life to them." "If it would not be for the group, we would never get there."

Social setting (involvement, interaction).—It refers to group unit, cohesiveness, or the extent to which you belong to the group; also, when a sentence refers to any interactions amongst the group. For example, "I think everyone in the group is getting on very well." "All the participants in the course are pleasant." "I had a good conversation with Bob."

Social setting (performance).—Assessment about how well the group (or someone else) is doing a certain activity. For example, "We made good time." Also, an assessment about how easy or difficult it is for the group (or for some members of the group) to do certain activities. For example, "People were finding it hard to walk uphill."

<center>Physical environment</center>

Physical environment (descriptive).—The extent to which you describe or contemplate the environment. For example, "It was at least an eight foot drop!" "The first camp was in a nice place." "It is a cold night."

<div align="right">(Continued)</div>

Table 1.—(continued).

Physical environment (interpretative).—The extent to which you try to understand, interpret, and/or predict the environment. For example, "Unless we have rain we will have a tame trip down the river." "That bird looked like a parrot."

Physical environment (impactful).—The extent to which you think the environment has an impact on you or on the group. For example, "This place really levels people out."

Physical state

Physical state (comfortable).—It refers to whether your body is feeling good, relaxed, comfortable, strong, fit, etc.

Physical state (uncomfortable).—It refers to whether your body is feeling tired, tense, etc. It also refers to a "collective" physical state.

Effort

Mental effort.—When you are concentrating on something and/or talking yourself into a difficult task. For example, "Only by concentrating on one step at a time could I get through."

Physical effort.—When you are pushing your body to the limit.

Descriptive

Descriptive.—"I am sitting under by bivy." "They are cooking dinner." "We are up again early in the morning."

Descriptive (evaluative).—When the description involves either a positive or negative evaluation. For example, "Breakfast was great." "Swimming was marvelous." "It went smoothly."

Descriptive (dangerous).—Description that involves perception of dangerous episodes. The focus is on the difficulty or danger of the activity itself (not on how difficult it was for you or the group to do it). For example, "Some of the rapids we went through were quite dangerous."

General thoughts

Things that come to your mind and cannot be placed in the other categories. For example, "I wonder how everything is at home."

book. However, the argument that it is easier to write about something external to the self, such as the social and physical environment, is equally valid. Moreover, here the *self* categories reflect a "cognitive appraisal" of oneself and not just a mechanical description of what one has been going through (e.g., "I realized that the limitations I placed on myself are no longer valid").

Among the subordinate categories of *self*, self (awareness) was the most salient making up 35% of all self-references. This suggests that the wilderness experience of Outward Bound allows people to learn something about themselves or perceive themselves in a different light. Given that participants by and large considered the Outward Bound experience to be very challenging, it was interesting to note that self (coping) was the second most frequently used subordinate category (22%), followed by self (others) and self (capabilities, performance) (17%) and self (flow) (9%). Note that self (control) and self (no control) were not useful concepts in representing the Outward Bound

wilderness experience. Perhaps the notion of control as it is construed in one's day-to-day circumstances is not suitable for explaining the individual-wilderness interactions. This is a notion discussed elsewhere on a conceptual level (Scherl 1986). Talbot and Kaplan (1986) also referred to this issue in the context of discussing similar results from their study.

The frequency of occurrence of the subordinate categories comprising the *social setting* domain revealed that participants were primarily describing the people around them, their

appearance, and what they were doing. Secondly, they were aware of being involved in a group and interacting with others, and thirdly, they acknowledged support and dependency on the group. Leadership and group performance were overall not very prominent in log-book references to the social milieu (12%). Noteworthy is the lack of any acknowledgment by participants with respect to gaining information about themselves from others.

Next, in a middle-range position with respect to category, was *physical environment* (13%) and *emotional state* (11%). Although the wilderness setting was not a familiar milieu to the participants, it appeared that the environment itself was taken for granted and references to it were predominantly descriptive in nature. The environment was seldom acknowledged as impactful, and environmental interpretation was not a feature of the Outward Bound experience. The most salient emotional state was high arousal (negative), followed by low arousal (positive) and high arousal (positive). The least mentioned emotional state was low arousal (negative). It is interesting to note that a large array of emotional states were experienced throughout the program, since, to a certain extent, all of the categories were used.

Physical state and *effort* were not very important aspects of participants' writings. The *general thoughts* category for content not fitting elsewhere was rarely used, indicating the comprehensiveness of the taxonomy.

The Process of a Wilderness Experience

For additional analyses, the total content of the log books were compartmentalized into the days of the program. Hence, data on the saliency of the perceived experiential domains were obtained for each of these days. Tables 4 and 5 present, respectively, data on the usage of the superordinate and subordinate experiential domains throughout the program.

Description of activities remained salient throughout the program. As suggested earlier, this could be seen as a characteristic of writing log books. Emphasis was placed here on discussing changes in saliency across days for the remaining categories.

Day 1.—Participants were tuned

Table 2.—Relative frequency and percent usage for each superordinate category.

	Categories	RF	%
1	Emotional state	64	11
2	Self	123	22
3	Social setting	111	19
4	Physical environment	70	13
5	Physical state	31	6
6	Effort	18	3
7	Description of activities	141	25
8	General thoughts	13	2

RF = absolute frequency divided by 4 times median of score of range.

Table 3.—Relative frequency and percent usage for each subordinate category.

	Categories	RF	%	% within each subset
1a	Emotional state—high arousal (positive)	18	3	25
1b	Emotional state—high arousal (negative)	26	4	36
1c	Emotional state—low arousal (positive)	20	3	28
1d	Emotional state—low arousal (negative)	8	1	11
2a	Self (others)	25	4	17
2b	Self (coping)	30	5	22
2c	Self (flow)	15	2	9
2d	Self (awareness)	48	8	35
2e	Self (capabilities, performance)	24	4	17
2f	Self (control)	2	0	0
2g	Self (no control)	3	0	0
3a	Social setting (descriptive)	46	7	32
3b	Social setting (leadership)	12	2	9
3c	Social setting (social feedback)	5	1	5
3d	Social setting (support, dependency)	23	4	18
3e	Social setting (involvement, interaction)	34	6	27
3f	Social setting (performance)	12	2	9
4a	Physical environment (descriptive)	57	9	75
4b	Physical environment (interpretative)	5	1	8
4c	Physical environment (impactful)	11	2	17
5a	Physical state (comfortable)	7	1	20
5b	Physical state (uncomfortable)	25	4	80
6a	Mental effort	9	1	33
6b	Physical effort	13	2	67
7a	Descriptive	100	16	70
7b	Descriptive (evaluative)	40	7	30
7c	Descriptive (dangerous)	3	0	0
8a	General thoughts	13	2	

RF = absolute frequency divided by 4 times median of score of range.

firstly to the *social setting*. They referred to the social context predominantly in a descriptive way (i.e., Who are the group members and what do they look like?). Secondly, participants' attention was focused on the *self* and primarily on how they viewed themselves in relation to others. Assessment of capabilities was also relatively important; self (coping) and self (awareness), though less salient, were also mentioned.

Day 2.—Attention appeared to turn inward on the second day. Self-references were more common than descriptions of activities (33% versus 23%). It was predominantly a day where participants were concerned with coping and given a chance to find out more about themselves and assess their capabilities. Relationships with others were much more in the background and the *social setting* was of marginal importance.

Day 3.—The *social setting* again became salient but for different reasons than on day 1. *Emotional state* and *self* were also important themes. In contrast to day 1, when participants by and large were describing the social setting, the supportiveness of the group and one's dependency on it was much more prominent. Involvement and interaction with others was also acknowledged. This day

was the only one in which *emotional state* was more outstanding than *self*, and highly aroused (negative) emotions accounted for 50% of these references. On this day, they descended the gorge, and participants had to cope with fear of heights. Self (awareness), self (capabilities), and self (others) were equally salient on this day.

Day 4.—*Social setting* and *self* were equally important, with participants predominantly describing what the group did and writing about self-awareness. The *physical environment* started to become more salient at this time.

Day 5.—On the fifth day, *social setting* still remained people's major focus of attention and, again, primarily in a descriptive way. This was the rafting day, and group cooperation was required.

Day 6.—*Self*, which had not been central since day 2, became central again in preparation for solo—particularly self (awareness) and, to a lesser extent, self (coping) as a result of some participants feeling apprehensive about solo (i.e., a time when one is alone).

Day 7.—During the solo day, the *physical environment* was uppermost in people's log entries, and the isolation also focused attention to the self.

Self (awareness) was predominant.

Day 8.—On the last day, the discrepancy between the perceived saliency of the different domains diminished. This may indicate that participants perceived the experience in a more integrated way. Still, the *social setting* and physical environment were mentioned most often, followed by *emotional state*. *Self* was not as important this day, even though it was salient throughout the program.

Summary of the Dynamics of a Wilderness Experience

The broad picture of the dynamics of this wilderness experience showed diversity and change. The categories portraying different domains of a wilderness experience were unevenly used throughout the program by the participants. One could suggest that among other things, such as increase in familiarity of the setting and group, the shifts in the nature of the activities themselves contributed to the diversity of these perceptual changes.

Within the diversity, *self* and *social setting* emerged as the most consistent throughout the program (with the exception of solo where participants lacked social contact). *Self* was

Table 4.—Relative frequency and percent usage for each superordinate category across the days of the Outward Bound program.

Superordinate categories	Day 1 RF	%	Day 2 RF	%	Day 3 RF	%	Day 4 RF	%	Day 5 RF	%	Day 6 RF	%	Day 7 RF	%	Day 8 RF	%	General RF	%
1 Emotional state	6	9	7	10	14	19	8	11	7	12	4	7	5	7	8	16	5	9
2 Self	13	20	24	33	12	17	12	18	7	12	13	24	16	24	6	12	20	38
3 Social setting	18	27	9	12	17	23	12	18	15	25	8	15	4	6	12	23	16	30
4 Physical environment	1	1	4	5	6	8	10	15	3	5	10	19	18	27	10	20	5	9
5 Physical state	3	5	6	8	4	6	4	6	4	6	3	5	5	7	1	2	1	2
6 Effort	0	0	6	8	2	3	4	6	2	3	1	2	1	1	1	2	2	4
7 Description of activities	23	35	17	23	17	23	17	25	21	35	14	26	16	24	13	25	1	2
8 General thoughts	2	3	0	0	1	1	1	1	1	2	1	2	3	4	0	0	3	6

RF = Absolute frequency divided by 4 times median of score range.
% = Percentage of time a category has been used.

Table 5.—Relative frequency and percentage usage for each subordinate category across the days of the Outward Bound program.

		Day 1			Day 2			Day 3			Day 4			Day 5			Day 6			Day 7			Day 8			General		
	Subordinate categories	RF	%	% set	RF	%	% set	RF	%	% set	RF	%	% set	RF	%	% set	RF	%	% set	RF	%	% set	RF	%	% set	RF	%	% set
1a	Emotional state—high arousal (positive)	2	3	29	2	2	29	5	6	28	2	3	25	2	3	33	1	2	25	0	0	0	3	6	38	1	1	25
1b	Emotional state—high arousal (negative)	4	6	57	5	5	71	9	11	50	2	3	25	1	2	17	2	3	50	0	0	0	0	0	0	2	3	50
1c	Emotional state—low arousal (positive)	0	0	0	0	0	0	4	5	22	4	6	50	1	2	50	1	2	25	4	6	80	2	4	24	1	1	25
1d	Emotional state—low arousal (negative)	1	1	14	0	0	0	3	4	23	0	0	0	0	0	0	0	0	0	0	0	0	3	6	38	0	0	0
2a	Self (others)	5	8	41	3	4	11	3	4	23	3	4	21	1	2	17	3	3	13	0	1	20	3	6	38	7	11	27
2b	Self (coping)	2	3	17	11	14	39	2	2	15	2	3	15	3	5	50	2	7	27	1	1	6	1	2	17	3	3	11
2c	Self (low)	0	0	0	0	0	0	2	2	15	1	1	7	1	2	17	1	3	13	1	2	29	1	2	17	2	3	11
2d	Self (awareness)	2	3	17	7	9	25	3	4	23	5	7	36	3	5	50	2	3	34	5	8	47	4	8	66	11	17	42
2e	Self (capabilities, performance)	3	4	25	6	8	21	3	4	23	3	4	21	1	2	17	2	5	13	3	4	18	0	0	0	3	5	12
2f	Self (control)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2g	Self (no control)	0	0	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3a	Social setting (descriptive)	1	17	58	4	5	37	7	9	31	5	7	41	3	5	34	3	5	34	3	4	75	2	4	17	3	3	15
3b	Social setting (leadership)	3	4	16	1	1	9	1	1	4	0	0	0	3	5	17	0	0	0	0	0	0	1	2	8	1	1	5
3c	Social setting (social feedback)	0	0	0	0	0	0	0	0	0	2	3	17	0	0	0	0	0	0	0	0	0	1	2	8	1	1	5
3d	Social setting (support, dependency)	1	1	5	2	2	18	9	11	39	1	1	8	1	2	6	0	0	0	0	0	0	1	2	8	6	9	30
3e	Social setting (involvement, interaction)	4	6	21	2	2	18	6	7	26	2	3	17	4	7	24	2	3	22	5	5	42	1	2	8	6	9	30
3f	Social setting (performance)	0	0	0	2	2	18	0	0	0	2	3	17	2	3	12	2	3	22	1	1	25	2	4	17	8	12	40
4a	Physical environment (descriptive)	1	1	100	3	4	75	5	6	83	8	12	89	2	3	22	2	3	22	0	0	0	1	1	17	1	1	5
4b	Physical environment (interpretative)	0	0	0	1	1	25	1	1	17	0	0	0	3	100	100	9	15	75	10	20	100	2	3	29
4c	Physical environment (impactful)	0	0	0	0	0	0	0	0	0	1	1	11	2	3	8	1	2	8	1	1	5	0	0	0	1	1	14
5a	Physical state (comfortable)	1	33	0	0	0	0	1	1	17	3	3	17	2	3	17	4	6	20	0	0	0	4	6	57
5b	Physical state (uncomfortable)	2	3	67	6	8	100	1	1	83	2	3	50	1	2	100	3	5	100	1	2	100	1	2	100	1	1	50
6a	Mental effort	0	0	0	3	4	38	1	1	100	2	3	50	2	3	50	4	6	100	1	2	100	1	2	100	1	1	50
6b	Physical effort	0	0	0	5	6	62	0	0	0	4	6	50	1	2	50	1	1	0	0	1	100	0	0	0	1	1	33
7a	Descriptive	17	26	74	11	14	65	12	15	75	13	19	69	8	13	62	21	86	12	19	81	8	16	62	2	3	67
7b	Descriptive (evaluative)	6	9	16	5	6	29	3	4	19	5	7	26	8	13	38	2	3	14	3	4	19	5	10	38	1	1	33
7c	Descriptive (dangerous)	0	0	0	1	1	5	1	1	6	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	2	3	67
8a	General thoughts	2	3	0	0	0	1	1	0	0	0	0	0	2	3	4	1	1	0	3	5

RF = Absolute frequency divided by 4 times median of score of range.
% = Percentage of time a category has been used
% set = Percentage of time a category has been used relative to its subject.

particularly central when coping was required and people had not developed enough trust in the group (day 2) or the group was not available for support (day 7). From day 3 on, self (awareness) was the most salient. In the last day when participants reconsidered what they had experienced throughout the program, self (awareness) accounted for 66% of all that was mentioned about self. By and large, most of the experiences of the Outward Bound course seemed to promote self-discovery and understanding; at only two points in time were other aspects of *self* more salient. The latter being on day 1 when individuals were interested in comparing themselves to others, and on day 2 when one was concerned with coping. It was also noteworthy that during solo, participants achieved a state of "flow," the only time this category was ranked second in usage. The fact that *self* was central to individuals' attention suggests that the Outward Bound programs are achieving one of their important objectives (i.e., to provide an opportunity for self-evaluation, understanding, and reflection). It may also be that people going to Outward Bound programs are more open to the idea of self-evaluation. Some of the participants' writings with respect to "self" were, "I learned that I am not as friendly as I could be...I started off well with handshakes and at this stage have only related well to two persons." "I don't know that this will be a permanent change for the rest of my life...but I know I can do it...if I want to and when I want or need to."

With reference to the *social setting*, participants acknowledged support and dependency, particularly during the abseil. It was interesting to note how salient involvement and interaction with others became at the end of the program, when, for the first time, this is the most important aspect about the *social setting*. In general, the trend seemed to be that when attention to the *self* increased, then attention to the *social setting* decreased

and vice versa. Some examples of participants' references to the *social setting* are, "The group is working smoothly as a team." "Everyone is so supportive...no criticism, only praise, encouragement, and a helping hand (or foot)."

References to the *physical environment* remained in the background of individuals' perceptions until near solo. It was interesting to note that the environment became quite important to people's experiences, regardless of whether this was largely a consequence of having more time to look around. As one participant put it, "For the first time in my life I felt at peace with nature, so obviously the intimate contact with it over the preceding days has had its effect." Still, if one of the major intentions of a wilderness experience was to make people aware of the physical features of the environment or the effect that the environment may have upon them, the data here suggest that this objective can be better achieved in situations where coping is not required, and perhaps in smaller groups contexts.

According to the log books, participants' *emotional states* were particularly salient to them at two points in time—during the abseil descent when they were apprehensive and fearful, and on the last day when they were excited about having completed the course, but sad that it was over. "It was apparent that the fear was building up, not of the abseiling itself but only of the heights." "I am very sad that the group is splitting up since I am just getting to know people gradually."

Effort and *physical state*, even given the demanding nature of the course, were not mentioned often at any time. This may suggest that the quality of the experience overrode its hardship. It would have been easy to complain about discomfort if one was not getting something in return for one's effort. Still some references to this were made such as, "The program so far has been quite arduous

and pushed us all to our physical limits (and in some cases mental ones) but we have all achieved more than we thought we could."

Relationships Among Experiential Domains

Overlap coefficients, which are compatible with the assumption of treating each wilderness experiential domain as a "fuzzy set," were used to compute relationships among these different domains (a thorough explanation of these coefficients can be found in Smithson 1987, where this analysis is also cited, and also in Scherl and Smithson 1987). Because partial membership of content into categories is permitted, fuzzy sets may automatically overlap with one another. This, of course, is different from assumptions of independence and linearity on which most conventional measures of relationships are based.

The concern of this analysis was to find out whether any of the superordinate experiential domains overlapped and, if so, whether the source of the overlap could be traced to corresponding overlaps between specific pairs of subordinate categories (see Scherl[4] and Scherl and Smithson 1987 for more detailed information). For instance, if the experiential domain *self* overlaps with *emotional state*, in the sense that when an Outward Bound participant is writing about his/her emotions they also refer specifically to some aspect of the self, which aspect of the self and which particular emotional state co-occur?

Two relationships worth noting were found. One, between *self* and *effort*, yielded a moderately high overlap coefficient of 0.46. Table 6 summarizes the relationship between

[4]Scherl, L. M. In preparation. The wilderness experience: psychological and motivational considerations of a structured experience in a wilderness setting. James Cook University. Unpublished Ph.D. dissertation.

self and effort, and their respective subordinate categories. Evidently the overlap among the experiential domains is spread fairly evenly over both subordinate domains for *effort* [(a) mental effort and (b) physical effort], but the same cannot be said of the subordinate categories for *self*. Clearly, there is only one subordinate category of *self* that overlaps substantially with *effort*, and this is B (coping). The conclusion is that nearly half of the time ,when participants were writing about either mental or physical effort, they mentioned the self and, in particular, how the self was coping. This particular finding confirms an assumption underlying the Outward Bound philosophy. That is, individuals may enhance self-understanding when confronting challenging situations.

Relationships among experiential domains need not always be as readily traced as the one above. For instance, the experiential domains *emotional state* and *self* overlapped moderately, but as table 7 shows, none of their respective subordinate categories overlapped substantially. All emotional subordinate categories except for c (low arousal positive emotions) overlapped somewhat with superordinate *self*, indicating that the overlap between *self* and *emotional*

state covers several different kinds of emotions. This fact, combined with the lack of corresponding, overlaps between the subordinate domains of *emotion* and *self* point to the conclusion that there is some aspect of *self* that overlaps with *emotion* that was not included in any of the subordinate domains devised by the researcher. It may be that a kind of self-consciousness gained from coming in closer contact with one's emotion in the wilderness setting cannot be as easily labeled in the cognitive domain.

Conclusion

I hope this taxonomy is suitable for other situations related to wilderness experience. However, only further research will validate or improve it as a more general representation of the various dimensions of a wilderness experience. A taxonomy such as this can provide a way of comparing and classifying wilderness experiences from different settings and/or wilderness experiences of a different nature. It can yield information on frequency of occurrence of the several experiential domains and patterns of change within these experiential domains as por-

trayed by the participants during the experience.

Information regarding management of wilderness areas may be enhanced if we can combine this type of knowledge about the individually perceived domains of the wilderness experience with knowledge of desired and expected psychological outcomes (as illustrated in the work carried out by B. Driver), or with general knowledge about benefits obtained from wilderness. We may arrive at a point where experiential profiles of different wilderness situations can be developed. By comparing these profiles, we may be able to start asking ourselves whether some situational (such as the physical environment, group composition, structure of activities) attributes or population attributes or a combination of both are more likely to yield a particular type of experiential profile.

As a final note, I would like to look at the discussion here in light of the broader topic of this congress— worldwide conservation. I have been, for some time, concerned with the fact that social scientists working in this area have not been more openly and forcefully using their research results and efforts to argue more directly for the preservation of wilderness areas. This is certainly the case in Australia and Brazil, two countries in which I have lived for long periods of time, but I cannot speak for what is happening elsewhere.

When I first wrote for information about this congress, I felt that the results I had obtained from my research could help contribute to the argument that wilderness areas should be preserved and that I should at least take some steps in that direction. I have seen and become close to people who have had experiential opportunities which were very important to them while in wilderness. Although the state of knowledge in this area, in terms of empirical findings, cannot convincingly be used to argue that the expe-

Table 6.—Relations between 2 (self) and 6 (effort).

	2	a	b	c	d	e	f	g
6	.46	.01	.34	.00	.04	.09	.15	.00
a	.60	.00	.46	.00	.04	.11	.15	.00
b	.43	.00	.34	.00	.06	.07	.00	.00

Table 7.—Relations between 2 (self) and 1 (emotional state).

	2	a	b	c	d	e	f	g
1	.31	.10	.15	.30	.13	.18	.18	.19
a	.30	.04	.10	.16	.07	.04	.00	.00
b	.36	.07	.14	.00	.09	.15	.18	.02
c	.24	.01	.01	.18	.09	.01	.00	.07
d	.46	.09	.02	.07	.22	.04	.00	.10

riences found in a wilderness setting are found nowhere else, I have a strong feeling that this is the case and I wonder how many of you would agree with me. With this in mind, earlier this year I participated in the ECOPOLITICS II conference on the politics of the environment, which gathered people from all over Australia and New Zealand, at which I was the only person to present a paper related to wilderness experiences. To my surprise, when I received information back, I realized that a whole symposium devoted to this area was to be held in a congress, with the broader theme of worldwide conservation. I felt that there were obviously a lot of other people thinking like me and that feeling was rewarding.

Yet, I still feel uneasy about whether we are really consciously orienting our work and research efforts so that it can help the conservation of wilderness areas, and this, of course, is ultimately a matter of personal choice. But if social scientists working in this area are legitimately concerned about this issue, then we should consider it from the very outset of our work (i.e., when adopting a research focus). Perhaps, for instance, there is a danger of concentrating research on "benefits" because it may be easier to argue that some benefits obtained in wilderness are not wilderness dependent, and this of course weakens the argument for the preservation of those areas. I am not saying that this type of research is not important; if it was not then we would not be here. What I am saying is that, perhaps, we should question if this is the way we would like to continue. If research, instead, concentrates on understanding the nature and quality of wilderness experiences by more closely examining the individual-wilderness relationship, we may find ourselves in a better position to argue for wilderness conservation.

The argument that the integrity of human experiential possibilities will

be lost if these areas are destroyed could be an important one, but its strength as an argument for the preservation of wilderness areas relies on more knowledge about this experiential complexity. Biologists can convincingly argue now that wilderness areas should be preserved because we need to maintain and protect representative ecosystems and the species diversity. We social scientists should be aiming at arguing equally convincingly for the preservation of these environments on the basis of the maintenance and protection of experiential diversity and complexity. Once we obtain enough information in this area, we should attempt to demonstrate that the nature and quality of individual-wilderness interactions are such that they cannot be found elsewhere. Only then, will we be able to more soundly argue that it is wilderness which we need.

It seems to me that we need these types of interactions (or the opportunity for them) for the maintenance of healthy human functioning, be it psychological, physical, spiritual, or mental. Moreover, a research focus that concentrates on the relationship between individual-wilderness and attempts to understand the experiential complexity of that situation could also be seen as less ethnocentric.

Within this approach, the underlying message is that wilderness environments are something that we relate with in a special way. Wilderness should, therefore, be respected on its own right, and not something which is there so it can fulfill our needs. A less ethnocentric approach, where from the outset the focus is the reciprocal interaction between the individual and wilderness, is perhaps more compatible with a broader environment ethic.

Acknowledgments

Literature Cited

Grid Analysis Package. 1981. University of Manchester Regional Computer Centre (2nd edition).

Kelly, G. 1955. The psychology of personal constructs: a theory of personality. New York: Norton.

Scherl, L. M. 1986. Self in wilderness: is personal control a viable notion for understanding individual-wilderness interaction? Presented at 16th annual meeting of Australian social psychologists; May; Townsville.

Scherl, L. M. In press. Constructions of a wilderness experience: using the repertory grid technique in the natural setting. Australian Psychologist. 1988.

Scherl, L. M.; Smithson, M. 1987. A new dimension to content analysis: exploring relationships among thematic categories. Quality and quantity. 21.

Slater, P. 1977. Exploration of interpersonal space, vols. I & II. London: John Wiley and Sons.

Smithson, M. 1987. Fuzzy set analysis for behavioral and social sciences. New York: Springer-Verlag.

Talbot, J. F.; Kaplan, S. 1986. Perspective on wilderness: re-examining the value of extended wilderness experiences. Journal of Environmental Psychology. 6.

Episodic versus Continued Wilderness Participation— Implications for Self-Concept Enhancement

Richard Schreyer, Daniel R. Williams, and Lois Haggard[1]

Abstract.—Much of the focus on the benefits of wilderness for self-concept enhancement has been in short-term, single-episode experiences. This paper suggests a need to focus more on the benefits of long-term participation. Self-concept is a relatively stable construct that evolves gradually through time. Furthermore, people select behaviors which will allow them to express their conceptions of self-concept. Three major dynamics of self-concept expression are discussed in the context of wilderness participation: the creation of opportunity structures, the use of symbols, and the structuring of social interactions.

A potential benefit of wilderness is its capacity to help people improve their self-concept (Gibson 1979, Kaplan 1984). Most research in this area has focused on structured training experiences that represent episodic participation; that is, presumed benefits in self-concept are related to single events, though they may have a duration of several weeks. Our purpose in this paper is to suggest the need to focus more attention on the potential role of long-term participation in maintaining and improving self-concept.

Self-concept represents one's definition of the self as it is manifested through personality, capabilities, and interactions with others and the environment. It is a complex mixture of perceptions and evaluations, and is instrumental in guiding future behaviors, as well as in developing expectations about the responses of others. While these may be integrated into an overall assessment, they are in reality an aggregation of many diffuse dimensions.

There is some question as to just how stable one's self-concept is. Some researchers maintain that self-concepts are remarkably stable, and that they are often maintained over periods of many years in essentially the same form. From this perspec-

tive, most human behavior involves attempts to *maintain* one's self-concept (Swann 1983). However, others emphasize the fact that individuals do develop through time, and behaviors may be selected in order to project aspirations concerning what an individual *would like to become* (Jones and Pittman 1982). In this sense, self-concept is a function of an evolutionary process.

Wilderness settings have been pointed to as places that provide considerable potential for self-concept improvement. It is important to make a distinction between wilderness as a unique place for improvement and wilderness as possessing characteristics shared by many other environments that may serve as vehicles for the enhancement of self-concept. While not unique in its ability to afford self-concept enhancement, wilderness possesses many attributes particularly well suited to the development of self-concept.

Natural settings are generally characterized by the presence of obstacles which present potential challenges. The opportunity for solitude may be linked to increased likelihood that social forces will not interfere with one's confrontation with those natural challenges. Thus, the capacity to focus on one's self-testing is enhanced. While natural settings in general provide these opportunities, wilderness environments are particularly rich in such features. There are some substantial forces influencing

the manifestation of self-concept oriented behaviors in episodic, as opposed to non-episodic, participation which should be considered.

Episodic Participation

We define episodic participation as a single participation event in wilderness, whether for a single day or a period of several weeks. The person may visit wilderness at some future date, but that is unknown; the focus of imputed benefits is within the context of this participation event. Our focus is primarily on structured experiences, such as NOLS or Outward Bound, in which the purported goal of the experience is in fact to improve self-efficacy.

Issues in Self-Concept Improvement

The effectiveness of such programs has been subject to debate. However, there is a large and growing literature documenting empirical results showing improvements as measured by various self-concept instruments in pretest-posttest situations (Burton 1981; Driver et al. 1987; Ewert 1983, 1987; Kaplan 1984). The bulk of this literature alone suggests support for presumptions of improvement.

Issues which remain arguable are: To what extent is *self-concept* im-

[1]*Department of Forest Resources, Utah State University, Logan, UT; Department of Recreation and Leisure, University of Utah, Salt Lake City, UT; and University of Utah, Salt Lake City UT.*

proved, as opposed to the individual dimensions measured by the various scales? Is the observed change really *long term*? Are improvements noted real, but in fact not supported by the person's environment once the individual returns to previous social structures? Given that self-concept is a stable construct essentially resistant to change through time, are the brief changes of such episodic events really likely to alter self-concept, something few other episodic events are expected to do?

The Role of Wilderness

In addition to the concern for the limits of episodic events in being able to make significant and/or long term changes in self-concept, there is a concern about the extent to which wilderness provided the benefit, as opposed to the structured event. Certainly wilderness serves as the *vehicle* for such improvement. But the impetus may come not so much from the environment, or even from the self, as it comes from the *social situation*.

As we have mentioned, self-concept is instrumentally related to social response from the environment. Episodic events are structured social situations in which the rhetoric and consequent agenda are aimed at meeting challenges and improving one's self-concept. In this sense, *any vehicle* (urban environment, gymnasium, etc.) could be used within the context of the event. Because the environment is unfamiliar and the tasks are programmed, persons are essentially put into a dependency relationship with instructors in which performance may be tantamount to social approval. The structured learning situation may be the mechanism of improvement, not wilderness.

Values and Self-Concept

Another major issue is the role of values in the wilderness/self-concept

link. This may sound somewhat out of place in a discussion focusing on empirical outcomes as opposed to philosophy, but the consequences may be more significant in the long run. The use of wilderness as a *vehicle* to abet a *structured process* is essentially value-neutral. This effectively removes the benefit process one step further from wilderness as a concept. The implications of this may be seen through a couple examples. Ultra-rightwing paramilitary organizations may use such environments to improve the self-efficacy of members with the ultimate goal of facilitating the ability to commit murder and mayhem. Large corporations are increasingly sending executives to such structured experiences in order to help members more effectively claw their way up the organizational hierarchy.

The values of those who would commit warfare or engage in egregious exploitation of resources to maximize corporate gain appear to be anathema to the fundamental meaning of wilderness. Yet because wilderness can be used as a vehicle for a process, these mechanisms become effectively value-neutral; they can be used for the manifestation of any perspective. This serves to further widen the gap between the benefits of the process and the benefits of wilderness. We recognize that many wilderness training programs incorporate wilderness values as part of their instruction. However, we know of no research that shows those values to be the actual source of self-concept improvement, in distinction to the nature challenge elements of the structured process.

Long Term Participation

The purpose of this paper is not so much to argue against the benefits to self-concept enhancement of episodic structured participation as it is to contrast the dynamics of such self-improvement with that of long term

participation. As we have noted, there are two major dynamics involved in self-concept: the first is verification or concept maintenance. The second involves concept development.

Self-Concept Maintenance

People will actively seek to maintain interactions with the world that affirm self-concepts. Swann (1983) identifies three strategies for doing this: the creation of "opportunity structures" or situations in which self-concept may be affirmed, the use of symbols to represent personal self-concept, and structuring the nature of social interactions to affirm the concept. We believe wilderness environments—again, while not unique in this regard—provide particular opportunities for manifestation of these strategies.

Opportunity structures.—Wilderness represents a particularly potent opportunity structure. Behavior is defined as relatively free, giving the individual the chance to develop the pattern of participation which will be most likely to reinforce the individual's conception of self-concept. Schlenker (1984) uses the term "selective performance" to characterize our tendency to select those activities most likely to permit our identities to be developed.

Wilderness affords the individual maximal opportunity to perform one's selected activities in order to create one's personal opportunity structure. A major distinction between this and structured events is that the opportunity setting here is manifested through *personal choice*, as opposed to adapting to an imposed structure. Of course, many persons enter structured episodic events voluntarily, but that is not the same as structuring one's own personal opportunity setting.

Symbols.—The affirmation of self-concept through symbols is particularly enhanced. Perhaps no other use

of land is so heavily imbued with *symbolic meaning* as wilderness. The physical setting which could serve as a mere vehicle for self-efficacy thus takes on a broader significance through its symbolic meaning as wilderness, increasing its utility to individual self-concept maintenance. Thus, the *values inherent in wilderness* become a major source of self-concept expression, as opposed to value-neutral processes.

The richness in the symbolic values of wilderness also enhances the ability of people to display symbols to affirm self-concept. Identification with wilderness through these symbols may be reinforced through long term participation. Such symbols as books, artwork, membership in wilderness organizations, and types of clothing are frequently used vehicles for self-concept expression.

Social interactions.—Persons seek to structure the nature of social interactions in order to affirm conceptions of the self. One of the ways this is facilitated is through the evolution and adoption of norms of wilderness behavior. An entire lifestyle may be created around the norms and values expressed in the appreciation and manifestation of appropriate behaviors in wilderness. Continued interaction with others who share similar values and norms is a powerful means of self-concept reinforcement.

One may argue that episodic structured experiences teach norms of appropriate behavior, but the distinction here can better be understood through the analogy of knowing a foreign language. What we are talking about would be akin to the difference between becoming proficient in a foreign language and being able to use it to attain intimacy with others, as opposed to the process of learning the foreign language itself.

Self-Concept Enhancement

The other component of self-concept—that of personal enhance-ment—also gains impetus through continued participation. Kelly (1987) has asserted that one of the major roles of leisure participation in general is to give individuals the opportunity to project desired self-conceptions, and then choose activities to allow them to become those projected selves.

The free-choice context of leisure allows for the chance to change opportunity structures in desired directions. Thus, it is inherent in the nature of *continued participation* that it allows people to identify those components of leisure experiences which are most enhancing of the self, and then allows the individual to work toward that change. These themes are echoed in the literature on development, as manifested in such evolutionary concepts as recreational specialization (Bryan 1977). Persons with greater amounts of experience change qualitatively in the values they ascribe to participation (Schreyer et al. 1984). Further, such continued participation results in an ever more focused attachment to aspects of the experience which may afford personal identification and reward.

It is possible to argue that we are returning to models of self-concept enhancement that are more focused on process than on wilderness per se. However, the critical distinction is that these processes of development find their essential manifestation in *long-term* participation rather than in episodic events. Beyond that, the capacity of wilderness settings to allow opportunities for self-enhancement may be essentially similar to other settings.

Conclusion

We believe significantly more attention should be focused on the potential benefits of long-term wilderness participation in enhancing self-concept. In particular, we believe that such an emphasis can help ar-ticulate the role of wilderness values in the process of self-concept formation, rather than merely using wilderness environments as vehicles for socialization processes. Further, it can enhance our appreciation of the developmental advantages of continued participation as opposed to episodic structured events.

Wilderness settings have the potential to benefit individuals in many ways. We wish to broaden the picture.

Literature Cited

Bryan, H. 1977. Leisure value systems and recreational specialization: the case of trout fisherman. Journal of Leisure Research. 9(3): 174-187.

Burton, L. M. 1981. A critical analysis and review of the research on Outward Bound and related programs. New Brunswick, NJ: Rutgers University. Ph.D. dissertation.

Driver, B. L.; Nash, R.; Haas, G. 1987. Wilderness benefits: a state-of-knowledge review. In: Lucas, R. C., ed. Proceedings, National wilderness research conference: issues, state-of-knowledge, future directions. Gen. Tech. Rep. INT-220. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station: 294-319.

Ewert, A. 1983. Outdoor adventure and self-concept: a research analysis. Eugene, OR: College of Human Development and Performance, University of Oregon.

Ewert, A. 1987. Values, benefits and consequences in outdoor adventure recreation. In: A literature review: the President's commission on Americans outdoors. Washington, DC: 71-80.

Gibson, P.M. 1979. Therapeutic aspects of wilderness programs: a comprehensive literature review. Therapeutic Recreation Journal. 13(2): 21-33.

Jones, E. E.; Pittman, R. 1982. Toward a general theory of self-presentation: defined by attributions sought by the actor. In: Suls, J.; Greenwald, A. G., eds. Psychological perspectives on the self, volume 1. Hillsdale, NJ: Erlbaum: 231-262.

Kaplan, R. 1984. Wilderness perception and psychological benefits: an analysis of a continuing program. Leisure Sciences. 6(3): 271-290.

Kelly, J. R. 1987. Freedom to be—a new sociology of leisure. New York, NY: MacMillan.

Schlenker, B. R. 1984. Identifies, identification and relationships. In: Derlaga, V., ed. Communication, intimacy and close relationships. New York, NY: Academic Press.

Schreyer, R.; Lime, D. W.; Williams, D. R. 1984. Characterizing the influence of past experience on recreation behavior. Journal of Leisure Research. 16(1): 34-50.

Swann, W. B. 1983. Self-verification: bringing social reality into harmony with the self. In: Suls, J.; Greenwald, A. G., eds. Psychological perspectives on the self. Hillsdale, NJ: Erlbaum: 33-66.

The Effects of Pretesting and Degree of Adventure on Self-Concept

Anderson B. Young and Thomas W. Steele[1]

Abstract.—Involving 184 participants in four college level Outdoor Education Practicums (OEP), this study tested (1) whether posttest Tennessee Self Concept Scale (TSCS) scores were higher for groups exposed to the instrument as a pretest; (2) whether groups exposed to Project Adventure during the OEP had higher TSCS scores than those in the standard OEP; and (3) whether the OEP effected positive self concept change. No significant differences were found for groups exposed to the pretest or to the Project Adventure component. Effects of the basic, low adventure, OEP were significant.

Over 100 studies have been conducted on the effects of Outward Bound, adventure education, and related types of outdoor programs. Most frequently, the dependent variable is self-concept, usually measured by the Tennessee Self Concept Scale (TSCS). These studies stem from the idea that the progression of challenges faced by program participants leads to desirable increases in self-confidence, self-concept, and other characteristics. Despite a number of exceptions, the collective trend of these studies suggests that such programs have a positive effect on self-concept. Unfortunately, as noted repeatedly across the last decade (Ewert 1983, Holmes 1985, Iida 1976, van der Smissen 1976), most studies claiming significant effects are weakened by one or more of the following flaws:

1. The most common weakness is the use of one group designs. As emphatically noted by Campbell and Stanley (1963), the one-group pretest-posttest design forces the researcher to make clear why positive results should be attributed to the treatment instead of nearly every conceivable threat to internal validity. In most instances,

researchers have not faced that formidable task.

2. In the studies employing comparison (control) groups, the subject groups and/or the treatment given are highly nonequivalent. Treatment groups are usually self-selected, predisposing them to being affected by the treatment, while comparison groups are generally comprised of those who did not seek or receive any treatment. Although covariate analysis can ameliorate problems of statistical nonequivalency, it cannot be trusted to solve the problem of differential recruitment (Campbell and Stanley 1963). Even in studies with randomly selected or similarly recruited comparison groups, educational research ought to compare alternate forms of treatment rather than some instruction or no instruction.

3. In nearly every study, all subjects are pretested. Neither through design nor statistical analysis are pretest effects measured. One wonders if similar results could be expected with groups not exposed to the instrument prior to treatment.

4. Finally, few studies have attempted to identify the components of outdoor programs that affect outcomes. Because so many different types of outdoor programs seem to yield positive self-concept change, there certainly is no single formula for success. Yet little is known about the critical ingredients for designing effective programs. Indeed, it is not even clear to what degree an outdoor program has to fit the adventure-education model of progressive challenges in order to achieve significant changes in self-concept.

There are exceptional studies that serve as models for further research. Through a longitudinal study with 16 one-group pretest-posttest replications, the durable gains reported by Holmes (1985) were more convincing than the findings of earlier one-group studies. In different ways, other studies (Ewert 1982, George 1979, Stogner 1978) represent improved recruitment of comparison groups or more appropriate comparisons of alternative treatments. Not only did George's study compare viable treatment alternatives, it also approached a "component analysis" by having two of the compared treatments differ in only one respect. The issue of pretesting, which can only be measured in a true experimental design

[1]Department of Recreation and Leisure Studies, State University College at Cortland, Cortland, NY.

with random selection, seems not to have been addressed before the present study.

Despite many studies on the effects of high-adventure outdoor programs on self-concept, there remain unanswered questions which form the basis for the hypotheses tested in this study.

Hypotheses

1. Exposure to the TSCS as a pretest, in itself or through treatment interaction, affects posttest TSCS scores. Test-retest reliability findings for the TSCS would suggest that pretest exposure, in itself, does not affect subsequent posttest scores.[2] In conjunction with a treatment, however, pretests could affect outcomes. Outdoor-program studies to date have not examined whether comparable results can be achieved with subjects who were not pretested.

2. Subjects exposed to Project Adventure or a ropes course component during an outdoor program will have higher TSCS scores than subjects who do not receive ropes course training. In Outward Bound types of adventure-education programs, ropes course training is a standard component. In that

[2]To test the hypothesis that pretests interact with treatments to affect posttest scores, one also could regard the pretest as a treatment and create a replicated factorial nonequivalent control group design with Project Adventure or level of adventure as the other independent variable. Unfortunately, one cannot use the pretest as a covariate and as a treatment. Therefore, despite nominal and statistical equivalency of groups, the results would have to be viewed cautiously. Using this approach, no significant main or interaction effects were found.

context, it is definitely needed in the progression of skills instruction for the mountaineering experiences that follow. Yet its popularity as a stand-alone program and as a component in non-mountaineering personal growth oriented outdoor programs would suggest that many practitioners believe it to be a critical program component. That belief or similar postulations (e.g., Ewert 1983) about linear relationships between personality changes and adventure activities are untested hypotheses.

3. A professional preparation course in outdoor education (Outdoor Education Practicum or OEP), not rooted in the adventure education model, will effect significant changes in self-concept. Seeking to promote personal growth, many programs have tried to emulate the Outward Bound/adventure-education model. Some may wonder if shorter programs, conducted in less remote areas, with less emphasis on stress inducing challenges, and involving lower-risk activities, can in any way approach the success of Outward Bound.

Methods

The study was conducted during two physical education and two recreation education summer Outdoor Education Practicums (OEP) at the SUNY-Cortland Outdoor Education Center in the Adirondacks. The OEP is a required, hands-on professional preparation course in the methods and principles of outdoor education and organized camping. Secondarily, it seeks to foster positive environ-

mental attitudes. The OEP includes 7 or 8 days of skills training at the Center and 5 or 6 days of flatwater canoe tripping in semiwilderness areas.

For this study, one physical education department OEP and one recreation department OEP were modified to include high ropes adventure activities. In other respects, these two OEP's were nearly identical to their low or nonadventure education, control-group counterparts.

In all four OEP's, half of the students were randomly selected for pretesting with the Tennessee Self Concept Scale (TSCS). All subjects were posttested.

Design

The overall research paradigm was a nonsimultaneous variation of the separate-sample pretest-posttest control-group design (Campbell and Stanley 1963). Its complex appearance in figure 1 is simplified by recognizing within it the simpler and more powerful designs that were used to address the three research questions. For clarity, the component designs are named in conjunction with their associated research questions or hypotheses.

1. To test the hypothesis that exposure to a pretest affects posttest scores, one combines the pretest with the treatment variations ($0 + X_1$ and $0 + X_2$) and regards $0 + X_1$ and $0 + X_2$ as "treatments." Consequently, one can test the hypothesis through four replications of the true experimental posttest-only control-group design or through a single large posttest-only control-group design with a four strata random sample. If the pretest interacts with either of the treatments, the $0 + X_1$ or the $0 + X_2$ groups should have higher posttest scores.

2. To test the hypothesis that the OEP with an added adventure education component would effect higher self-concept scores than the OEP without project adventure, one eliminates the unpretested subgroupings to create two separate nonequivalent control-group studies (fig. 2). Given nominal and statistical equivalency, replication, and covariate analysis, results can be interpreted with measurable levels of confidence.

3. Finally, to test the hypothesis that the OEP (with or without a project adventure component) affects self concept, one, again, eliminates the unpretested subgroupings to create four replications of the pre-experimental one-group pretest-posttest design (fig. 3). Although normally considered a weak design, in this application, most threats to internal validity could be dismissed. History was controlled through the experimental isolation of subjects during the OEP itself and through replication. Regarding maturation, existing research would refute claims that in the span of 2 weeks, with or without intervention, college students' self-concepts normally change (Dickinson 1979, Fitts 1965). Test-ing effects would be measured in the findings for hypothesis 1. Because the TSCS is a fixed, printed test with established reliability, instrumentation problems were improbable. Regression effects were unlikely because groups deviated minimally from TSCS norms and because the design permitted replication of results. Selection and mortality are normally controlled by this design. Of all the threats to internal validity, only the interaction of selection with other factors would remain as a possible but improbable threat.

Subjects

The study involved 184 recreation and physical education majors who were taking the respective summer Outdoor Education Practicums aş a requirement for their majors. Most recreation majors had finished their sophomore or junior year; most physical education majors had completed their junior or senior year. The mean ages of physical education and recreation majors were 22.2 and 20.3, respectively. Seventy percent of the recreation majors were women. Only 43.6% of the physical education majors were women.

Physical education majors chose OEP sections on a seniority basis; recreation majors were assigned to sections in a quasi-random fashion. Because of differing methods of assignment, male-female ratios, ages, and pretest scores, physical education and recreation major groupings could not be considered equivalent, even for the purpose of a nonequivalent control group design. Pretest measures confirmed the reasonable equivalency of the two physical education groupings and of the two recreation groupings.

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R  O   X₁   O

R      X₁   O

------------------------------(Physical Education Majors)

             R   O   X₂   O

             R       X₂   O

============================================================

                          R   O   X₁   O

                          R       X₁   O

(Recreation Majors)----------------------------------------

                                    R   O   X₂   O

                                    R       X₂   O


SYMBOL            MEANING

  X₁              Outdoor Education Practicum (OEP)

  X₂              OEP with Project Adventure Unit

  O               Tennessee Self Concept Scale

  R               Random Assignment

  --              Similarly recruited, nominally &
                  statistically equivalent

  ==              Differently recruited, nominally &
                  statistically nonequivalent
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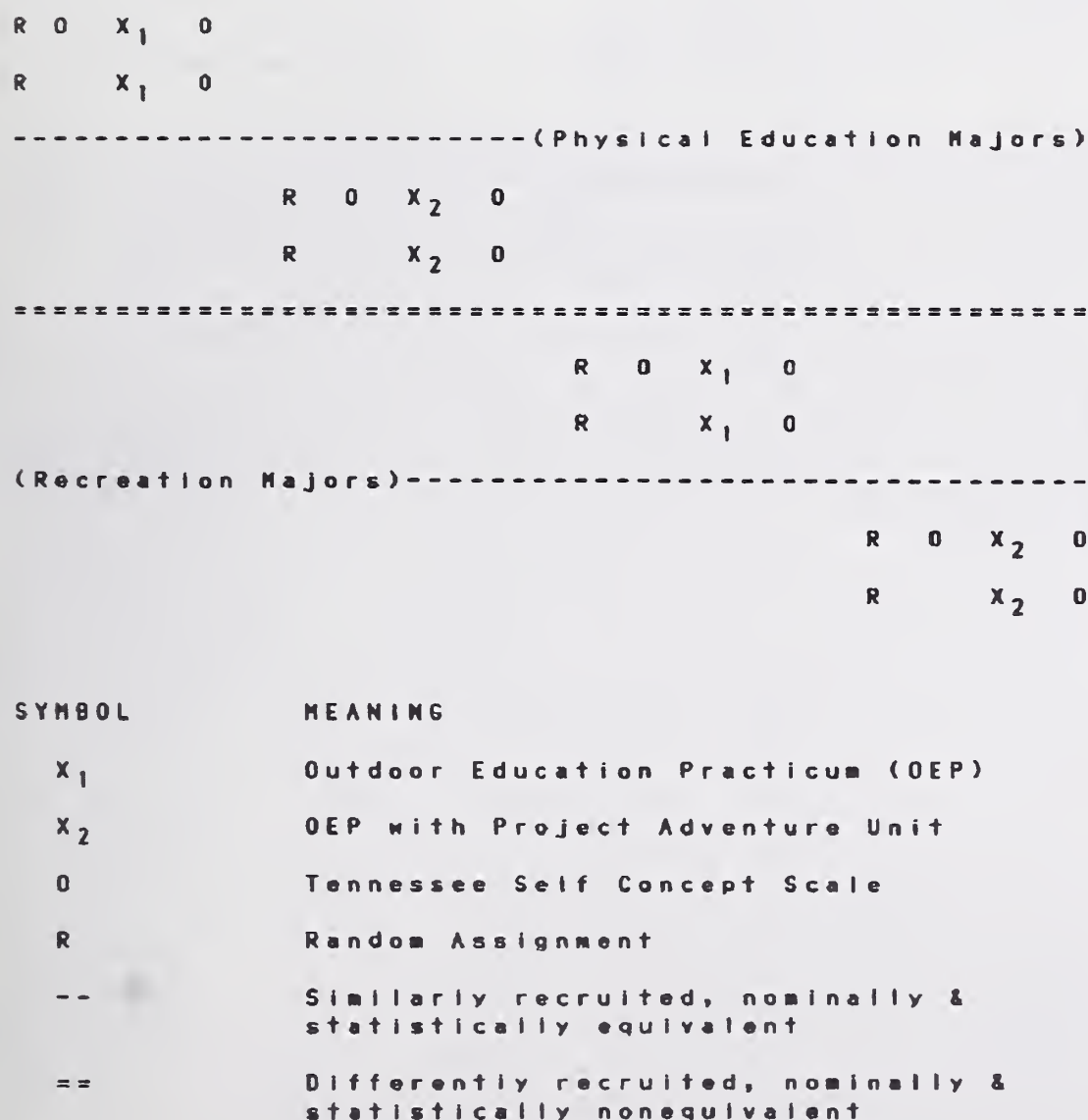
Figure 1.—Research paradigm: nonsimultaneous variation of the separate-sample pretest-posttest control-group design.

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Treatments

The study was conducted at the SUNY-Cortland Outdoor Education Center, accessible only by water, in the Adirondack region of New York State. The principal treatment, the Outdoor Education Practicum, is a required, experientially taught professional preparation course in the methods and principles of outdoor education and organized camping. Secondarily it seeks to foster positive environmental attitudes. The OEP includes 7 or 8 days of "in-camp" skills training at the Center and 5 or 6 days of flatwater canoe tripping in semiwilderness areas. Although now teaching up-to-date low-impact camping skills, its basic character builds on the school-camping or resident outdoor education model described by Carlson (1983).

For this study, one physical education department OEP and one recreation department OEP were modified to include high ropes adventure activities. Physical education students spent 1 day doing low and high elements under the supervision of certified Project Adventure instructors and another half day of rappelling. Recreation students had a similar 1-day Project Adventure experience but did not rappel. In other respects, these two OEP's were nearly identical to their low or nonadventure-education, control group counterparts. The physical education students not receiving Project Adventure spent more time in orienteering and nature study. Their recreation counterparts took a day paddle to net suckers in a nearby stream.

Instrumentation

The Tennessee Self Concept Scale (Fitts 1965), used in this study, measures overall self-esteem and 10 other aspects of self-concept such as identity, self-satisfaction, physical-self, and social-self. With well established reliability and validity (Bentler in Bu-ros 1972, Fitts 1965), the TSCS was the most commonly used measure in earlier studies of outdoor programs and self-concept (Ewert 1983, Iida 1976). Because the instrument's 10 subscales are intercorrelated (Bentler), only its "Total Positive" overall self-esteem score was used.

Figure 2.—Nonsimultaneous, nonequivalent control group design. (Statistical nonequivalence and other factors prompted use of Physical Education majors and Recreation majors as representing different populations. Hence the experiment is conducted twice; i.e., it has built in replication.)

Figure 3.—Replicated one-group pretest-posttest design.

Analysis

Instruments were hand scored and double checked for accuracy before entering data for computer analysis by the Statistical Package for the Social Sciences (SPSS). Data were analyzed using SPSS descriptive, analy-
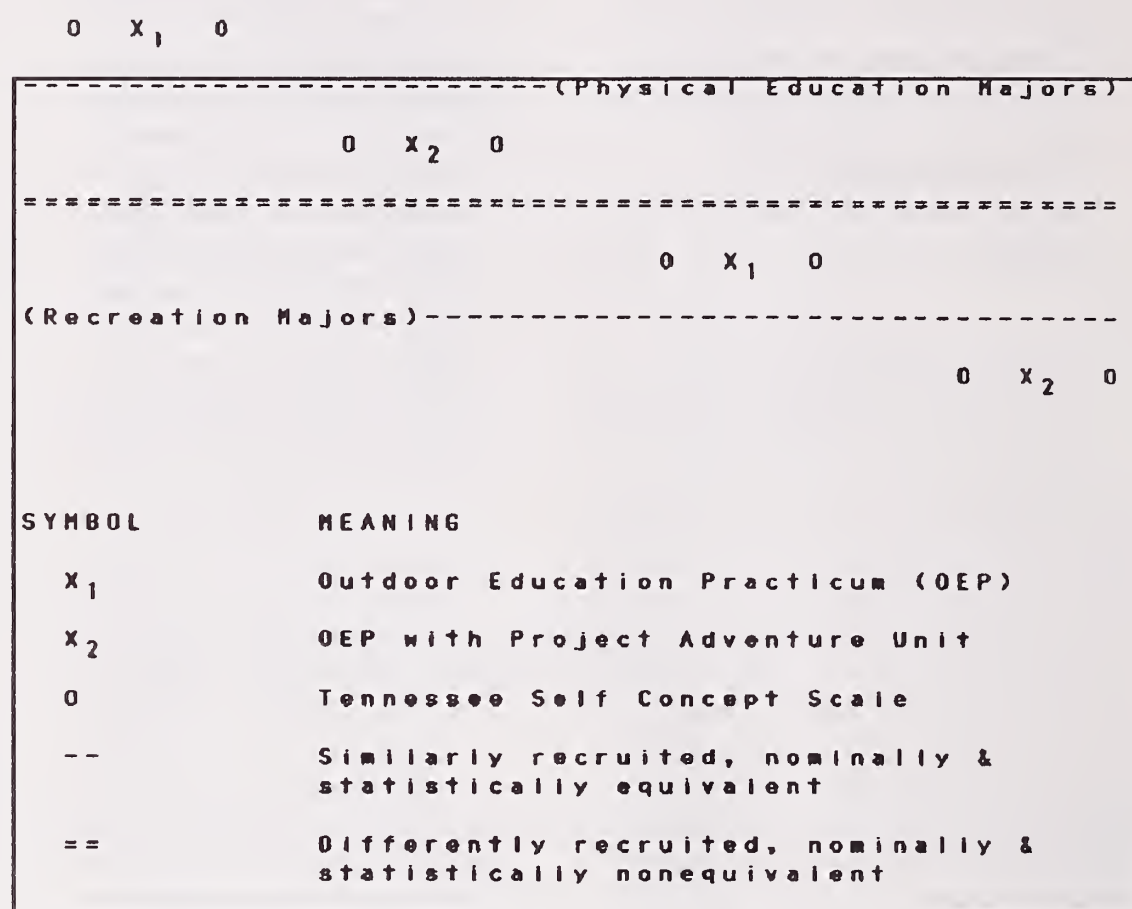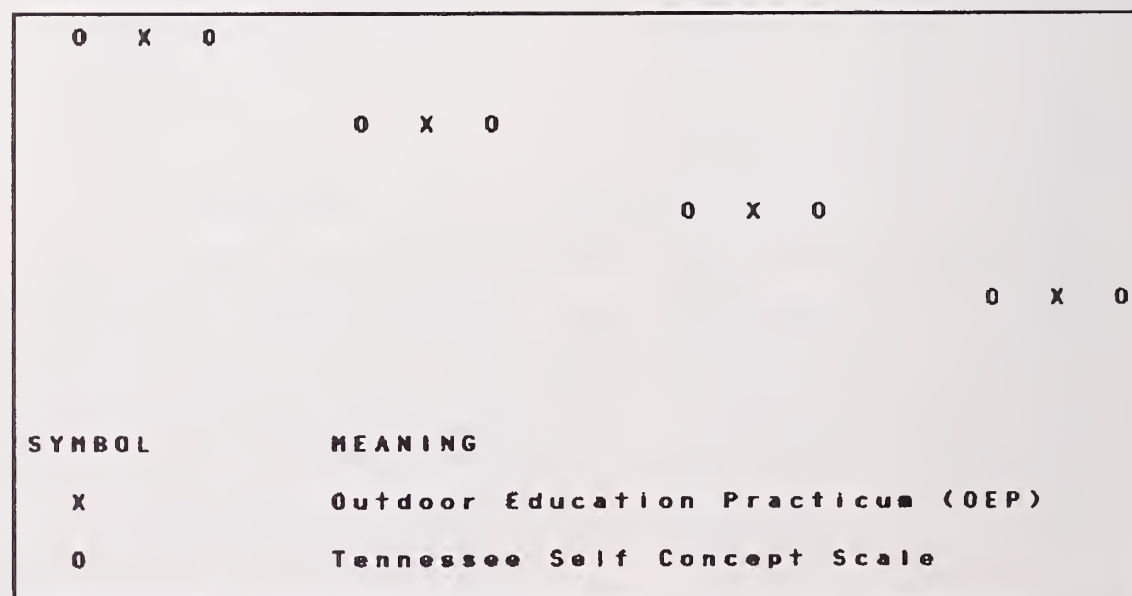
sis of variance (ANCOVA), covariance, and t-test procedures. ANCOVA was used to examine the pre-experimental equivalence of subject groups. An independent t-test was appropriate for the posttest-only design used with the first hypothesis. The dependent t-test was appropriate for the pretest-posttest design of hypothesis 3. Analysis of covariance, which adjusts posttest scores to compensate for pretest differences, was used with the nonequivalent control group design associated with the second hypothesis. All hypotheses were evaluated at the .05 level.

Results

1. Hypothesis 1 stated that the mean posttest score for subjects taking a pretest before the OEP would be higher than that of subjects not pre-

tested. As indicated in table 1, the pretested mean of 357.5 was not significantly different from the mean of 355.7 for subjects who were not pretested, t (182) = -0.44, p = .662. The null hypothesis was accepted.[3]

2. The second hypothesis stated that the adjusted mean score of subjects receiving a component of Project Adventure training would be higher than that of subjects exposed

[3] In several instances the reader, noting that the sizes of compared groups differ, may question whether the homogeneity-of-variance assumption has been violated. It has. As Hopkins and Glass (1978, p. 257, 358) point out, however, the violation is inconsequential when the larger n is associated with the larger variance or when the null hypothesis is asserted. From that perspective, therefore, the violations in this study were inconsequential.

only to the OEP. Because this experiment was replicated, two sets of data are presented in table 2. The adjusted posttest means of the two physical education groups differed little. In the replication with recreation majors, the difference was greater. The mean of the Project Adventure group was 354.2, while the mean of the OEP-only group was 349.7. Nevertheless, as illustrated in analysis of covariance (ANCOVA) tables 3 and 4, the differences were insignificant in both the initial physical education test [F (1, 44) = 0.12, p = .734] and the replication study with recreation majors [F (1, 44) = 1.17, p = .286].

3. The final hypothesis suggested that the Outdoor Education Practicum would effect significant gains in the overall self-concept of subjects. Table 5 shows the means, gains, and t-values for each class and for the four groups combined. Examined individually, three of the four OEP's were found to have had significant effects at the .05 level. When combined, the posttest mean of 357.5, a gain of 9.21, also reflected a significant change [t (89) = -6.19, p = <.001].

Discussion

This study addressed three questions: (1) whether TSCS pretests would affect posttest TSCS scores; (2) whether increasing a program's level of adventure with ropes course training would affect self-concept; and (3) whether a required college Outdoor Education Practicum, not rooted in the adventure-education model, could effect significant changes in

Table 1.—Mean posttest "Total P" overall self-esteem scores as a function of pretesting (replicated for four groups).

Group 1	n	Mean	S.D.	t value	DF	p
Not pretested	22	355.77	22.11			
				0.40	41	.691
Pretested	21	353.10	21.72			
Group 2	n	Mean	S.D.	t value	DF	p
Not pretested	27	347.22	30.09			
				-0.43	47	.668
Pretested	22	350.73	25.78			
Group 3	n	Mean	S.D.	t value	DF	p
Not pretested	24	363.71	18.97			
				1.21	45	.231
Pretested	23	354.00	34.10			
Group 4	n	Mean	S.D.	t value	DF	p
Not pretested	21	357.33	29.96			
				-1.51	43	.139
Pretested	24	370.83	29.99			
All groups	n	Mean	S.D.	t value	DF	p
Not pretested	94	355.69	26.14			
				-0.44	182	.662
Pretested	90	357.47	29.15			

Note: Group 1 = Recreation without Project Adventure; Group 2 = Recreation with Project Adventure; Group 3 = Physical Education without Project Adventure; Group 4 = Physical Education with Project Adventure.

self-concept. Neither pretesting nor the Project Adventure component had significant effects on self-concept. The Outdoor Education Practicum did have significant effects.

Strictly speaking, these results cannot be generalized beyond these populations of professional preparation students. Nevertheless, because the design of the study permitted each finding to be replicated, the implications merit consideration.

1. TSCS pretests need not be given to achieve results, and they do not bias results. Given the established test-retest reliability of the TSCS, this finding was not surprising. Nevertheless, usual research designs have, at best, controlled for rather than measured, pretest effects. Further replication of this study's finding would remove any doubts programmers have about whether results can be achieved if no pretest is given. Equally important, researchers would have less reason to suspect testing contamination in the existing body of studies that used one-group designs. (Unfortunately researchers and practitioners still face the external validity question of posttest effects.)

2. As a 1- or 2-day addition to a program, Project Adventure or ropes course training is not critical to self-concept change. Even the most enthusiastic proponent of Project Adventure would be reluctant to claim that a single day or two will alter personality. Nevertheless, in the context of the OEP, Project Adventure represented an increase in the level of stress and adventure. Therefore, it is worth noting that not every increase in adventure

programming yields self-concept gains. This finding does not suggest, however, that the ropes course experience was a waste of time. Students enjoyed it which is important in itself. In many contexts it is certainly useful for skills instruction and other outcomes not measured in this study. Further, Project Adventure, when combined with other growth-enhancing program components, may augment out-

comes. Additional research is needed to explore this possibility.

3. Adventure-education need not be the primary aim or model to achieve positive gains in self-concept. Perhaps too often outdoor professionals think their programs must emulate the dramatic activities and settings associated with Outward Bound. In fact, self-concept gains can be achieved through less

Table 2. — Adjusted mean total positive scores as a function of Project Adventure.

Group	N	Pretest	Posttest Unadjusted	Posttest Adjusted
Initial study with Physical Education Majors				
OEP with Project Adventure	23	343.72	354.00	361.31
OEP without Project Adventure	24	363.04	370.84	359.92
Replication study with Recreation Majors				
OEP with Project Adventure	21	342.00	353.88	354.15
OEP without Project Adventure	22	343.75	350.72	349.71

Table 3. — Analysis of covariance: posttest self-esteem scores with pretest as covariate (physical education).

Source of variation	Sum of squares	df	Mean square	F	p
Pretest	41901.25	1	41901.25	240.45	<.001
Treatment	20.41	1	20.41	0.12	.734
Residual	7667.67	44	174.27		
Total	49589.32	46			

Table 4. — Analysis of covariance: posttest self-esteem scores with pretest as covariate (recreation).

Source of variation	Sum of squares	df	Mean square	F	p
Pretest	16017.88	1	16017.88	88.72	<.001
Treatment	210.97	1	210.97	1.17	.286
Residual	7221.57	40	180.54		
Total	23450.42	42			

striking and less contrived challenges and through a variety of other means. Because subjects in this study were older and more physically able than those in most related research, many might think they would require greater adventure challenges to be affected. Nevertheless they changed during the OEP. Unfortunately this study did not reveal why they changed. Subjects spent more than half their time in the relative comfort of the 500-acre Outdoor Education Center. Their canoe trips lasted only 5 nights. The Practicum goals listed skills learning, professional preparation, and environmental appreciation above personal growth. The practicum directors, former students of L. B. Sharp and Julian Smith, were not inclined to quote Kurt Hahn or Claude Cousineau. Despite minimal resemblance to an Outward Bound type of program, the OEP effected significant change in students' self-concept.

Concluding a literature review and speaking of Outward Bound, Alan Ewert (1983) once said, "we have discovered an educational black box; we know something works but we don't know why or how." Perhaps we have discovered another "black box" or Alan's black box is bigger than first imagined. Regardless, we still don't know why or how. All three questions addressed in this study are a reminder of how little is known about specific variables responsible for self concept changes during outdoor programs. Two small variables were tentatively ruled out in this study. Researchers and program designers have the task of identifying what must be included.

Acknowledgments

Literature Cited

Buros, O. K., ed. 1972. The seventh mental measurements yearbook. Highland Park, NJ: Gryrhon Press: 366-367.

Campbell, D. T.; Stanley, J. C. 1963. Experimental and quasi-experimental designs for research. Chicago: Rand McNally.

Carlson, M. 1983. Realia in the recreation education curriculum. JOPERD. 54, (9).

Dickinson, R. 1979. A study to determine self-concept change through a program of wilderness skill development. Specialist in Education Practicum Report, University of Northern Colorado.

Ewert, A. W. 1982. A study of the effects of participation in an Outward Bound short course upon the reported self-concept of selected participants. Dissertation Abstracts International. 43: 3038A-3131A. (University Microfilms No. DA8301775.)

Ewert, A. 1983. Outdoor adventure and self-concept: a research analysis. Eugene, OR: University of Oregon, Department of Recreation and Park Management.

Table 5.—Effect of OEP on overall self-esteem score (replicated for four groups).

Group 1	Mean	S.D.	Gain	t value	df	p
Pretest	342.00	25.67				
			11.10	-4.11	20	.001
Posttest	353.10	21.72				
Group 2	Mean	S.D.	Gain	t value	df	p
Pretest	344.68	25.79				
			6.05	-1.74	21	.097
Posttest	350.72	25.78				
Group 3	Mean	S.D.	Gain	t value	df	p
Pretest	342.00	33.02				
			12.00	-5.29	22	<.001
Posttest	354.00	34.10				
Group 4	Mean	S.D.	Gain	t value	df	p
Pretest	363.04	34.59				
			7.79	-2.36	23	.027
Posttest	370.83	29.99				
All groups	Mean	S.D.	Gain	t value	df	p
Pretest	348.27	31.77				
			9.21	-6.19	89	<.001
Posttest	357.48	29.15				

Note: Group 1 = Recreation without Project Adventure; Group 2 = Recreation with Project Adventure; Group 3 = Physical Education without Project Adventure; Group 4 = Physical Education with Project Adventure.

Fitts, W. H. 1965. Tennessee self concept scale. Los Angeles: Western Psychological Services.

George, R. 1979. Learning survival self-sufficiency skills and participating in a solo camping experience related to self concept. Dissertation Abstracts International. 40: 106A.

Holmes, C. A. 1985. The effects of a therapeutic wilderness camping program on the self-concept of adolescent females. Cornell University. Unpublished Master's thesis.

Hopkins, K. D.; Glass, G. U. 1978. Basic statistics for the behavioral sciences. Englewood Cliffs, NJ.

Iida, M. 1976. Adventure-oriented programs—a review of research. In: van der Smissen, B., ed. Research camping and environmental education. University Park, PA: Penn State HPER Series No. 11.

Stogner, J. D. 1978. The effects of a wilderness experience on self-concept and academic performance. Dissertation Abstracts International. 39: 4696A-4791A. (University Microfilms No. 7903204.)

van der Smissen, B. 1976. The dynamics of research. In: van der Smissen, B., ed. Research camping and environmental education. University Park, PA: Penn State HPER Series No. 11.

Changes in Self-Efficacy Through Outdoor Skills Instruction

David Cockrell[1]

Abstract.—Changes in specific and generalized efficacy resulting from exposure to outdoor skills instruction were examined for six different activities with varying levels of risk and arousal. Results suggest that a short experiential outdoor skills course can produce positive changes in efficacy expectations for performance and that greatest efficacy gains are found in those with low initial expectations. Activities with higher arousal potential appear to be more effective in producing efficacy changes.

Why do people expose themselves to the risks of discomfort, injury, or even death during leisure? What values do they seek or derive from struggling with wild environments their ancestors spent millennia subduing and avoiding? These very old questions have gained added urgency since World War II as Outward Bound, the National Outdoor Leadership School, and now many schools and universities teach students the skills needed to cope with travel and life in the wild outdoors. Why is this education important? What do students take away from our classes? Do the lessons from "risk recreation" transfer to other aspects of life?

To understand the motives of wilderness recreationists, many wilderness management researchers have turned to the expectancy theory of motivation, examining the psychological outcomes desired and expected by participants (e.g., Manfredo et al. 1983). However, Schreyer et al. (1978) have suggested that simply participating in an activity that allows a person to have an impact on his own destiny may be motivating in itself, regardless of the subsequent outcomes. White's (1959) "competence-effectance" motive is proposed as an alternative theoretical construct to guide research. Similarly, Allen (1980) proposed Bandura's (1977) efficacy expectations (convictions that one can perform the

required acts) as a supplementary *type* of expectation to outcome expectations.

While wildland recreation researchers have looked to desired psychological outcomes as the benefits of participation, outdoor educators have emphasized self-concept and personality changes as principal benefits of participation in outdoor programs (e.g., Iida 1975). Such effective changes have been obtained in a moderately large percentage of studies, but there remain some substantive questions about the conditions under which exposure to perceived risk in an educational or therapeutic wilderness setting will actually result in long-term positive changes. Harmon and Templin (1980) proposed Bandura's (1977) efficacy expectations as a mediating process that would permit perceived risk to translate personality change.

Thus, two convergent bodies of research have suggested that increased efficacy perceptions may be an important effect of recreational

and educational exposure to risk in wilderness. Interestingly, changes in efficacy expectations have not yet been examined in the context of outdoor education.

Bandura's Self-Efficacy Theory

Bandura's (1977) theory has been rather well articulated and tested (e.g., Bandura et al. 1980). Efficacy expectations are seen as cognitive representations of ability which are co-equal with outcome expectations in permitting the acquisition of new behavior patterns. Efficacy expectations vary on three dimensions: magnitude (the degree of difficulty of the task), generality (the extension of the expectation beyond a treatment situation), and strength (the persistence of the conviction in the face of failure). All three dimensions would be valuable in outdoor skills assessment. The generality of efficacy expectations may be of particular importance, however, as this would

[1] Division of Health, Physical Education and Recreation, Virginia Polytechnic Institute and State University, Blacksburg, Va.

Table 1.—Activity-specific self-efficacy scores for six outdoor skills.

Skill (n)	Efficacy pretest	Efficacy posttest	Efficacy gain
Kayaking (31)	1.29	5.89	4.73*
Canoeing (35)	3.22	6.72	3.81*
Rock climbing (66)	2.09	5.32	2.91*
Caving (38)	2.06	4.26	2.13*
Backpacking (53)	4.15	5.16	1.18*
Cross-country skiing (24)	2.08	2.66	0.33

*Paired t-test significant at $p < .01$.

measure the transferability of self-efficacy from the wilderness environment to other settings. The diversity of behaviors required in many wilderness recreation activities (e.g., winter camping) suggests a high generalizability to other settings.

Expectations of personal efficacy are seen to arise from four different sources: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Consistent with theories of experiential learning in outdoor education (e.g., Petzoldt 1984), performance accomplishments are seen as particularly influential sources of efficacy information because they are based on personal mastery experiences. Success raises mastery expectations; repeated failures lower them, especially if the failures occur early in the course of response acquisition (Bandura 1977). Vicarious experience (role modeling) and verbal persuasion are seen by Bandura as less dependable sources of information about one's abilities than direct personal accomplishments, and these sources often play subordinate roles in outdoor education. Finally, because too much or too little arousal usually debilitates performance, individuals should expect more success when their arousal levels are moderately high in the face of threatening behavior.

The present study examined changes in specific and generalized efficacy expectations as a result of exposure to outdoor skills instruction. Also, the study compared the differences in efficacy gains across six different activities with varying levels of perceived risk and arousal.

Method

The research design for this study was a pretest/posttest comparison group design (Isaac and Michael 1976). College students in "Introduction to Outdoor Skills" classes at a medium-size land-grant university in

the eastern United States constituted the experimental subject pool (n = 182). Subjects were enrolled in courses focusing on one of six outdoor skills: backpacking, cross-country skiing, rock-climbing, caving (spelunking), whitewater canoeing, and whitewater kayaking. The mix of performance accomplishment (practice), vicarious experience (instructor modeling), and verbal persuasion (lecture) was held constant across groups. Each course contained approximately 6 hours of hands-on experience per student, along with 4 hours of instructor modeling and 16 hours of in-class lecture and discussion over a 9-week period. (The only exception was the backpacking course, which required two 3-day trips per participant.)

A panel of 12 experienced outdoor leaders ranked the six activities according to the "degree of arousal typically experienced by beginning participants during their first few hours of instruction." Mean arousal rankings for the activities were used to evaluate gains across different activities.

To measure changes in specific self-efficacy, a technique was employed similar to that used by Bandura et al. (1980). A list of performance tasks was developed for each

activity, ranging from rudimentary to moderately demanding. Subjects rated their efficacy (beliefs that they could perform the required task) on a 10-point scale ranging from highly uncertain to completely certain. As in the studies by Bandura and his colleagues, strength of efficacy was estimated as the mean of the scores for a given subject.

Early in the first meeting of each skills class, subjects were asked to complete Sherer et al.'s (1982) generalized self-efficacy scale as well as the scale specific to the activity for that course. The Sherer self-efficacy scale is a 23-item Likert-type scale

Table 3.—Correlations between specific efficacy gains and pretest scores.		
Skill	Correlation w/ specific efficacy pretests	Correlation w/ general efficacy pretests
Kayaking	-.41*	-.35*
Canoeing	-.84*	.02
Rock climbing	-.49*	.38*
Caving	-.32*	.37*
Backpacking	-.19	.12
Cross-country skiing	-.37*	-.07

*Pearson correlation coefficient significant at p < .05.

Table 2.—Self-efficacy gain scores and arousal rankings for six outdoor skills.				
Skill	General efficacy gain[1]	Specific efficacy gain[2]	Correlations: specific gain x general gain	Arousal ranking[3]
Kayaking	.29	4.73*	.19	4.08
Canoeing	-.19	3.81*	.20	1.92
Rock climbing	.19	2.91*	.36**	3.83
Caving	.47	2.13*	.55**	3.83
Backpacking	-.03	1.18*	.19	.58
Cross-country skiing	-.15	.33	-.36	.92

*Paired t-test significant at p < .01.

**Pearson correlation coefficient significant at p < .05.

[1]Means on a 23-item scale (range = -9 to +9)

[2]Means on a 10-item scale (range = -9 to +9)

[3]Mean arousal potential rankings from 12 expert outdoor leaders (6 = high).

which has undergone construct and criterion validation studies and applications in a number of settings. At the final (ninth) course meeting, the self-efficacy measures were repeated and subjects who failed to meet the course attendance requirement were dropped from the sample.

Results and Conclusions

Paired t-tests indicated significant positive gains in specific efficacy expectations from pretest to posttest in all activities except cross-country skiing (table 1). Because there was no baseline increment of efficacy change generic to the six activities, standardized gain scores (Z scores) were used to compare activities. A one-way analysis of variance of standardized gain scores was highly significant (F = 11.38, p < .0001). The Tukey's Studentized Range Test showed gains in kayaking, canoeing, and rock-climbing to be significantly greater than gains in backpacking and cross-country skiing. The expert rankings for "arousal potential" in the six activities placed rock-climbing highest, kayaking second, caving third, canoeing fourth, cross-country skiing fifth, and backpacking lowest. Thus, the patterns of gain scores showed some consistency with arousal rankings.

The gain in generalized efficacy scores was not significant (gain = .036, t = .62, p = .54). A one-way analysis of variance showed no significant differences across activities (F = 1.32, p = .26), although the highest (and only positive) mean gains were for caving, kayaking, and rock-climbing. General efficacy gain was positively correlated to specific gains in all activities except cross-country skiing, although only the correlations for caving and rock-climbing were significant at p < .05.

Specific efficacy pretest scores were significantly and negatively correlated with gain scores for all activities, suggesting that those who

start low gain most. For rock-climbing and caving, general efficacy pretest scores were positively correlated with specific efficacy gain. For kayaking, general efficacy pretests were negatively correlated with specific efficacy gains. For the other activities, correlations were nonsignificant (table 2).

This study has suggested that a short, experiential outdoor skills course can produce positive changes in efficacy expectations for performance of the activity-specific tasks. Evidence of the transference of these efficacy gains to other aspects of life is much less conclusive. Interestingly, there appear to be considerable differences in the effectiveness of different activities in producing efficacy changes, and activities with higher arousal potential appear significantly more effective.

Literature Cited

Allen, S. D. 1980. Risk recreation: a literature review and conceptual model. In: Meier, J. F.; Morash, T. W.; Welton, G. E., eds. High adventure outdoor pursuits: organization and leadership. Salt Lake City, UT: Brighton.

Bandura, A. 1977. Self-efficacy: toward a unifying theory of behavior change. Psychological Review. 84: 191-215.

Bandura, A.; Adams, N. E.; Hardy, A. B.; Howells, G. N. 1980. Tests of the generality of self-efficacy theory. Cognitive Theory and Research. 4: 39-66.

Harmon, P.; Templin, G. 1980. Conceptualizing experiential education. In: Meier, J. F.; Morash, T. W.; Welton, G. E., eds. High adventure outdoor pursuits: organization and leadership. Salt Lake City, UT: Brighton.

Iida, M. 1975. Adventure-oriented programs: a review of research. In: van der Smissen, B., ed. Research camping and environmental education. Penn State HPER Series No. 11. State College, PA.

Isaac, L.; Michael, T. 1976. Handbook of educational research and evaluation. Englewood Cliffs, NJ: Prentice Hall.

Manfredo, M. J.; Driver, B. L.; Brown, P. J. 1983. A test of concepts inherent in experience based setting management for outdoor recreation areas. Journal of Leisure Research. 15: 263-283.

Petzoldt, P. 1984. The new wilderness handbook, New York, NY: Norton.

Schreyer, R. M.; White, R.; McCool, S. F. 1978. Common attributes uncommonly exercised. Journal of Physical Education and Recreation. 49: 24-29.

Sherer, M.; Maddux, J. E.; Mercandante, B.; Prentice-Dunn, S.; Jacobs, B.; Rogers, R. W. 1982. The self-efficacy scale: construction and validation. Psychological Reports. 51: 663-671.

The Evolution of the Outward Bound Process

Stephen Barcia Bacon[1]

Abstract.—This paper examines the way in which the Outward Bound process has evolved in the United States with particular emphasis on how it has changed to ensure greater transfer of course learnings. A typology of curriculum models is developed consisting of: (1) a first generation model—focusing on experience alone—which dominated Outward Bound programming in the 1960's and early 1970's; (2) a second generation model—emphasizing discussion, group processes, and imported techniques—which is the current ruling paradigm at Outward Bound; and (3) a third generation model—stressing experiential metaphors—which may provide a direction for future curriculum evolution.

Perhaps the most compelling aspect of Outward Bound is the life-affirming peak experience which occurs so predictably and regularly on the courses. This has fascinated Outward Bound observers and participants and elicited numerous articles by lay and professional writers.

While this positive experience has been documented so regularly that its existence is beyond question, its long-term effects are still relatively unknown. Certainly most Outward Bound participants believe that the experience is life transforming. Illustrating this point, Fletcher (1970) sent questionnaires to 3,000 Outward Bound students 5 years after they had completed their Outward Bound courses. Of the approximately 2,400 questionnaires that were returned, 98.6% of the respondees indicated the Outward Bound experience was either "successful" or "highly successful." Eighty-six percent of the students reported that their self-confidence had improved, 78% felt that they had increased in general maturity, and 64% believed that they had become more aware of the needs of others. Sixty-four percent thought that these changes would last for their lifetimes, 32% believed they would last for several years, and only 4% thought that their gains were limited to several months.

While these results are impressive, critical observers of Outward Bound suggest that the case for the long-term positive effects of Outward Bound is still unproven. They point out that outcome studies have not always found positive results (c.f., Shore 1976), that the better studies have found less impressive results than the poorer studies (Burton 1981), and that it is unrealistic to expect a short experience to transform life-long patterns (James 1980).

The increase in numbers of special population courses has also highlighted the "duration of impact" issue. As Outward Bound began to work with more clinical populations—e.g., substance abusers, troubled youth, Vietnam Veterans, and so on—the referring parties wanted to be sure that the course improvements would have a lasting effect.

In response to the research critiques and special population needs, Outward Bound program designers have paid increasing attention to the issues of transference and the generalization of course learnings to daily life. One could even argue that these concerns about transference have been the primary driving force behind Outward Bound curriculum evolution in the past decade. There has been little other impetus; as the Fletcher article demonstrates, the level of satisfaction of the Outward Bound students tends to support leaving the curriculum as is.

This paper examines how the Outward Bound curriculum has evolved in the face of these concerns about transference and to look at how the curriculum might change in the future. It will be argued that almost all of the curriculum developed to date falls into one of two broad categories: (1) the basic Outward Bound model imported from England in the 1960's; or (2) a more sophisticated version emphasizing detailed debriefings and psychoeducational techniques. The heart of this paper, however, lies in an exploration of a new model of Outward Bound curriculum—the Metaphoric Model, which emphasizes transforming Outward Bound activities into experiential metaphors.

Before proceeding, however, it is necessary to define several terms which will be used in the remainder of this paper. The "Outward Bound experience" is the peak experience of self-affirmation and interpersonal connection referred to earlier. Outward Bound events or activities are literal physical activities such as canoeing or rock climbing. When these events are strung together in a certain order and presented in a certain style or context, the combination of events and instructional styles can be called an Outward Bound curriculum.

This issue of instructional style is critical. The sequencing and type of Outward Bound activities do not

[1]Outward Bound USA, Greenwich, Conn.

constitute a curriculum; rather, it is the style and context of the presentation which is most significant. An Outward Bound course can vary by virtue of a number of factors including the physical condition of the students, the terrain, course length, and so on; yet if the style of instruction remains the same, the course outcomes will be essentially identical. However, if one keeps the same events, course length, etc., and alters the instructional style, the outcomes will be quite different.

This style or way of presenting Outward Bound events will be called a "curriculum model." In summary, a curriculum consists of the type, length, and sequencing of Outward Bound events as well as the curriculum model or models characterizing the instructors' instructional styles.

The "Mountains Speak for Themselves" Curriculum Model

The original Outward Bound curriculum model employed in the United States, which can be named the "Mountains Speak for Themselves" (MST) model, is based on an implicit assumption about Outward Bound's global efficacy (i.e., it believes that Outward Bound is an all-purpose change strategy which has such powerful impact that exposure to the Outward Bound experience can be useful for almost anyone). A curriculum based on this model includes only the most basic Outward Bound elements; essentially it consists of the minimal components necessary to generate the Outward Bound experience, the most frugal and sparing approach which results in an end-of-course "glow." The model particularly deemphasizes discussion and feedback. Similarly, it believes that reflection on the activities and insight into one's behaviors and feelings are primarily the responsibility of the student. The instructors provide space and time to conduct such activities, but they do

not see themselves as active facilitators of these processes.

Instructors adhering to this model are experts at mastering wilderness situations; they also have the ability to introduce the kinds of incremental challenges which lead to a sense of mastery and an emotional high. However, this approach does not support the concept that instructors should function as counselors, discussion leaders, or group-process experts.

Given this resistance to verbal expression, it is not surprising that there are no articles in the Outward Bound literature written by its adherents. However, Thomas James (1980) did write about the approach; in fact, he was one of the first writers to popularize the term the "Mountains Speak for Themselves" in print. James describes this model as follows:

> To begin with, it seems to me that people who are saying anything equivalent to "Let the mountains speak for themselves" are also saying something more, which is that instructors can rely on the overall structure of the Outward Bound course to give their students a good experience. They can rely on a training sequence, a way of grouping students and committing them to task performance, activities like solo and the rappel, etc...
>
> So the point is not exactly that the mountains do the teaching. It is that the training sequence we are using is a remarkably effective way to get people to learn in the mountains...
>
> ...The experience happens naturally if instructors are skilled enough to take their students safely through the adventurous activities that make up Outward Bound, and when they do that, the moun-

tains are extraordinary teachers indeed... (p. 2-3).

As mentioned above, the MST perspective believes firmly in the general efficacy of Outward Bound; it also suggests that the Outward Bound experience is so positive, profound, and powerful that it will automatically generalize to the student's daily life. Lest this sound somewhat unrealistic and naive, MST adherents caution against expecting excessive results from the Outward Bound program.

Just as significantly, they also suggest that Outward Bound instructors simply do not have enough special expertise to work with the Outward Bound process in more than a basic manner. James (1980) continues his discussion.

> ...It may be pretentious to expect that Outward Bound can do more than give its students what course director, Ron Gager, has called a "short-term turn-on." The standard course is only 23 days long. Instructors have no formal training in counseling, therapy, communications, human relations, etc. In fact, what instructors *are* trained to do is let the mountains speak for themselves by guiding a patrol into the wilderness, building up its skills for outdoor living, and then confronting it with a characteristic set of problem-solving tasks. Students coming to Outward Bound are looking for this very thing...What I am driving at is that the mountaineers are making an important point by demanding a more limited set of expectations for an Outward Bound course. Perhaps that point is that we should do what we do best, which is to deliver students into an extraordinary experience of action and adventure, leaving them to make of it what they will. (p. 8-9)

As James points out, this perspective recognizes the limits of Outward Bound; Outward Bound should "do what it does best" and leave the rest to others. As a result, the MST adherents believe that Outward Bound courses for special populations should essentially be a basic Outward Bound course with a homogeneous population. For example, a standard course where 100% of the students are alcoholics can be called an Outward Bound substance abuse course. The special population on these standard courses is simply encouraged, as mentioned above, to "make of it what they will," to get as much as they individually or collectively can from the courses without any sophisticated help from a specially designed curriculum or a specially trained staff member.

Historically, the MST approach has been successful for both standard and special population courses. As one would expect, these courses do achieve the usual Outward Bound outcomes. The students tend to have peak experiences at the end of the course, and they report an increase in their self-confidence and an enhanced sense of the interdependence of humanity.

However, in spite of these positive outcomes, the MST model has received substantial criticism. Not surprisingly, the criticism focuses on the transferability of the Outward Bound experience. James (1980) describes this critique as follows:

...(E)ducators are apt to follow John Dewey's notion that the challenge of any form of education is to select present experiences that will live fruitfully and creatively in future experiences. Few would disagree with this. Dewey, who was probably the greatest educational thinker ever produced in this country, wrote of learning as an experiential continuum, a continuity of growth experiences. But here is where

the disagreement begins, because he characterized learning not as the experience itself, but as thinking about the experience. So a form of education like Outward Bound that provides intense experiences also needs to provide tools for thinking about those experiences, for tying what has happened on a course into the experiential continuum of those who have passed through it. Another equally abstract way of saying this comes from social scientists who have studied learning behavior and concluded that the experience of the learner must be generalized into the learner's repertoire of skills and knowledge. Students need help to draw inferences, to see the pattern that connects their continuous experience. (p. 6-7)

James' general critique of the MST model's lack of verbal facilitation is oriented toward what happens on a standard course with normal students. His general critique can be extended and made more specific when one focuses on the MST approach to special population courses. For example, one can argue that MST-type courses are not based on a knowledge of the dynamics or special needs of a certain population (e.g., alcoholics). Clearly, Outward Bound courses for alcoholics would be more powerful if the staff knew something about the particular problems of substance abusers and were capable of integrating that knowledge into their courses.

In addition, the somewhat amorphous goals of Outward Bound—increased self-confidence and compassion—may not always lead to the precise behavior changes needed by certain special populations. For example, while it is logical to assume that enhancing the self-concept of a troubled adolescent should lead to less fighting with his parents, it is

difficult to promise that an Outward Bound course will result in that specific behavioral change. In other words, the global course goals of character development may be achieved, but that accomplishment may not lead to measurable and significant changes in the student's life.

The third criticism of the MST model is similar to the second; it argues that some special populations—such as alcoholics—have specific problem behaviors (i.e., drinking), which must be altered if the student is to have any long-term benefit from the course. This argument suggests that the courses need to be explicitly designed to impact those specific problem behaviors. In summary, the three criticisms of the MST approach to special populations are: (1) the curriculum does not reflect any special knowledge about the dynamics of a target population; (2) there is little proof that achieving global goals leads to specific behavior changes; and (3) if a change in a specific behavior is necessary for student growth, the course will be more effective if it directly concentrates on changing that specific behavior.

The "Outward Bound Plus" Curriculum Model

The three criticisms summarized above, plus James' argument about the transference problems inherent in the MST model, provided the impetus needed to develop a new approach to Outward Bound curriculum, a "second generation" curriculum model. The most significant change between the first and second generation curriculum models is that the second generation model emphasizes the importance of the instructor as a discussion leader, counselor, and group-process facilitator. In marked contrast to the MST approach, where experience was emphasized and discussions were discouraged, the second generation approach focuses on making cognitive links between the

course experiences and the student's daily life. In addition, it actively attempts to promote reflection, insight, and introspection.

The second generation model does not ignore the primary importance of experience in Outward Bound. It continues to use the basic Outward Bound activities and achieves the Outward Bound experience as regularly as a first generation approach. But in addition, it emphasizes *reflecting* on the experience. The second generation instructor not only provides the incremental course challenges which lead to mastery experiences, he or she actively assists the students' attempts to integrate the meanings of those experiences into their lives.

In addition to this emphasis on facilitating reflection and insight, the second generation model is different from the first generation model in that the basic Outward Bound experience is often supplemented by integrating effective techniques, beyond the Outward Bound, into the course curriculum. Adding these "imported" techniques allows one to assert that the resulting courses specifically address the needs of special populations. Examples of these imported techniques include using transactional analysis on courses for troubled youth, introducing Alcoholics Anonymous techniques into courses for substance abusers, and giving didactic lectures on communication skills during corporate training courses. While these techniques were originally included specifically for special population courses, in some cases their use has spread to the standard course. For example, it is not unusual for one to discover second generation instructors including relaxation, imagery, or neuro-linguistic programming (NLP) techniques on a standard course.

Because of this openness to the appropriate employment of imported techniques, the second generation curriculum model can be called the "Outward Bound Plus (OBP)" ap-

proach. It is worth noting that when the emphases on debriefing, group discussion, and instructor facilitation were first championed in the mid 60's, these verbal techniques were also considered "imported" techniques. However, somewhere around the mid 70's or early 80's, the verbal emphasis had become so common that many, if not most, instructors accepted it as an integral—or perhaps even an indigenous—aspect of Outward Bound.

The OBP approach is well illustrated in the following series of quotes taken from a magazine article about Outward Bound corporate courses (McGee 1985). Note how the opening comments by an Outward Bound staff member emphasizes transference, post-activity discussions, and introspection.

> The OB instructors don't formally teach management concepts, but at the end of every activity, we talk about what we learned. We always focus on, "What did you learn that you can use in the office?" We ask thought-provoking questions, so that the participants make the insights and do the connecting between the two parts (p. 19).

The article continues with a quote from a corporate trainer.

> "You learn the routine of rock-climbing. We put you at the bottom of an 85-foot rock and say, 'Climb.'...Afterwards an instructor will ask the group, 'What made it safe for you to climb?' and then point out, 'You had a safety rope tied around you that you—and someone else—had tested and trusted. You had a person on top—on belay—who was well anchored to the mountain holding the safety rope, using special techniques so if an accident happened, we weren't even depending on the

strength of the person—just their presence—to help guard you against being hurt. Who is on belay for you at work? Who checks your knots at work?'" (p. 19-20).

A participant made this final comment.

> The toughest challenge...was expressing the things that we had experienced after going through the physical activities, such as rappelling. It was pretty enriching to think about "How did it change me? What did it do for me?" The instructors tied it to, "How do you relate to the people you manage or work with...do you communicate with them?" (p. 20)

As one would expect, the OBP approach was even more successful than the MST model. Not only were the typical Outward Bound outcomes achieved, but also, many of the criticisms of the MST approach were successfully redressed.

For example, the OBP courses were clearly based on knowledge of the dynamics of a special population. Second generation instructors were expected to go beyond the more limited definition of an Outward Bound instructor; they were expected to become knowledgeable about the background and daily functioning of the specific population they were serving. As a result, alcoholics on an Outward Bound course were exposed to frequent comments about substance abuse problems, and corporate managers held many discussions about how Outward Bound learnings might transfer back to the job. Just as important, OBP instructors were prepared to target specific behaviors critical to the post-course success of their students. For example, alcoholics were encouraged to attend AA meetings and to form sobriety-oriented support systems, corporate managers learned about problem-

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solving techniques which could be directly applied at the office, and troubled youth learned how to communicate more effectively with their parents.

There were additional benefits as well. It was soon apparent that the Outward Bound environment provided a fertile context for the successful practice of non-Outward Bound techniques, a context which tended to multiply the power and efficacy of many psychotherapeutic methods. This was true for a variety of reasons. The level of stress on the course broke down traditional defenses. The activities were very concrete and thus provided an opportunity to try out new life strategies and graphically demonstrate success or failure. The supportive, small-group atmosphere promoted trust, rapport building, and risk taking. Finally, the overall wilderness setting was conducive to a feeling of renewal and revitalization. In summary, the OBP model overcame virtually all of the criticisms of the MST approach. It was knowledge-based; it related the course back to the student's real life; it was prepared to target specific behaviors and attempted to change the behaviors directly; it realized the power of "imported" techniques.

In spite of these notable successes, certain criticisms of the OBP model began to emerge. One concern was that it was to "techniquey"—that it was excessively dependent on using imported gimmicks, psychotherapy techniques, and lectures. The critics became concerned that the uniqueness of Outward Bound might be lost if the imported techniques assumed an excessively dominant place in the curriculum. A typical question asked by some of the critics might go something like: At what point does the extended amount of time devoted to verbal interactions and techniques significantly impair the basic Outward Bound commitment to doing and experience?

The second criticism of the OBP model is related to the first and fo-

cuses on when and how the course learnings are transmitted to the students. Outward Bound's ability to differentiate itself from other human development paradigms is dependent on its commitment to experiential learning. And yet in the OBP model, it can be argued that as much or more learning occurs during the post-activity discussions as during the actual experience. If the post-activity discussions are really assuming such a primary position, is the OBP model a "pure" form of experiential education?

In summary, the second generation model of population-specific curriculum did indeed achieve its goal of specificity. However, it may have achieved these goals by importing and emphasizing techniques which minimize the uniqueness of Outward Bound. Experience and adventure are still emphasized in an OBP model, but at times there can be a sense that the course activities are less important than the verbal discussions—the component of the OBP approach most responsible for specificity and transference. Such an emphasis throws Outward Bound open to the criticism that it is a conventional therapeutic or psychoeducational approach, albeit one which operates in a wilderness environment.

The MST and OBP models have been presented in depth because one must understand past and current Outward Bound practices before discussing future directions. However, the primary purpose of this paper is to look toward the future, to describe a third generation curriculum model. This model must attempt to conserve the OBP gains in specificity and transferability and simultaneously reassert the primacy of experience in Outward Bound. Furthermore, a third generation model needs to have a strong dedication to the development of an indigenous Outward Bound model. If Outward Bound wishes to be maximally effective with its students, and simultaneously achieve a credible position in the pro-

fessional world as well as in the world of ideas, it must continue to emphasize, develop, and refine its techniques in the area where it is unique: the use of adventure oriented *experiences* to facilitate human growth.

The Metaphoric Curriculum Model

The differences between the first, second, and third generation curriculum models can be graphically portrayed by examining the different ways in which each model would work with a particular Outward Bound activity known as the Wall.[2] Imagine a course for corporate managers. The group is co-educational, and the participants are concerned about sexist versus egalitarian leadership styles at work.

The MST instructor would take his group to the Wall, inform them of the relevant safety rules, and then stand back and watch them work through the challenge. Following the event, there would be little or no formal discussion of the activity; however, students might choose to talk about it informally.

An OBP instructor would follow the same scenario until the activity was completed. Then he or she would ask the group to meet and discuss what they had learned on the Wall, asking open-ended, general questions, such as, "Who were the leaders and who were the followers?", "How was this the same as or different from the way you function at work?", and "Were you pleased with your performance?"

With a number of groups, this type of questioning and the resulting

[2]The Wall is a 13- or 14-foot high smooth wall without any handholds or footholds. The purpose of the exercise is to get the entire group over the top. Once a person is over, he can no longer assist the students remaining on the initial side of the Wall except by pulling from the top. Hence, the crux of the exercise is to figure out how to get the last few students over the Wall.

discussion would help the group realize that their actions during the Wall activity were a reflection of their typical leadership styles at work. Given that the group has conflict around sex-stereotyped leadership roles, the conversation would probably focus on how those problems were illustrated by their behaviors on the Wall. The concreteness of the activity would allow for a graphic display of sexist leadership styles.

In discussing and reflecting on this experience, it is likely that the group would achieve powerful insights into their typical patterns. Ideally, the men would realize that they needed to become more open to feminine leadership, and the women would realize that they needed to take more risks and assume greater initiative. Both groups would resolve to practice these styles on the rest of the course and back in the workplace.

The instructor using a third generation or Metaphoric Model (MM) approach would also begin by offering the relevant safety rules. However, he would also add a few brief sentences of introduction to the activity:

> Most corporate groups who attempt the Wall tend to do it in a particular way. At the beginning, they mill around a bit with lots of people offering their suggestions. After some time, a couple of dominant males tend to start the group off. They get a few people to the top and then throw the women over like sacks of potatoes. Then the same group of dominant males decides how to do the hardest part which is getting the last few people up. Afterwards, during the discussion of the exercise, everyone agrees that the leadership was more-or-less sexist and there are various emotional reactions to that.

> There are other ways to do the Wall. Other groups have found them and I hope this group does too.

As may be imagined, following this introduction, the students become strongly motivated to master the Wall using nonsexist leadership styles. The short introduction has psychologically transformed the Wall from a 13-foot high plywood contraption which must be physically overcome to an experience which will test/examine/reveal the students' leadership styles. Should they get over the Wall using nonsexist strategies, they will have both an experiential success and a concrete memory of a time when they were able to work through a difficult problem in a co-educational group without discounting feminine contributions. Should they fail the task, there will be a clear and graphic depiction of the obstacles impeding egalitarian leadership in this group.

During the post-activity discussion, the instructor will not need to create an awareness that the activity was a metaphor for leadership; the metaphoric nature of the experience is already clear to the group. As a result, the students will arrive at the discussion eager to share their perceptions of the leadership styles on the Wall. They will want to discuss how those styles were the same as or different from their typical corporate styles, and they will want to examine the meaning of the event for their future behavior.

Clearly, both the OBP and MM approaches to the Wall generate powerful educational results, results which should transfer back to the students' daily lives and provide long-term benefits. It is important to note that both approaches are based on perceiving the Outward Bound activity as a metaphor for relevant corporate challenges. The difference between the approaches is that the second generation students generally do not realize the metaphoric nature

of the Outward Bound event until the post-activity debriefing. Conversely, third generation students perceive the metaphoric qualities of the experience as they pass through it; their post-activity discussion focuses on how they reacted to the metaphor, not on how they reacted to the literal experience of surmounting a 13-foot wall.

The title, "Metaphoric Model," does not refer to the idea that the third generation approach uses metaphors and the second generation approach does not; rather, it is used because learning and transference occur via *experiential* metaphors in a third generation approach. In contrast, as will be shown below, the OBP model uses cognitive processes—primarily reflection and insight—to achieve transference. In summary, the basic difference between second and third generation approaches is *when* the physical experience becomes metaphoric. This difference in timing has critical implications for student learning.

A Definition

The Metaphoric Model is a way of working with Outward Bound activities which emphasizes consciously framing course events so that they serve as experiential metaphors for salient challenges in the students' daily lives. The four primary components of the MM approach are presented below.

1. Assessment:—The first step in using the metaphoric model is to understand the particular students on the course in hopes of determining what challenges and/or problems typically characterize this group of people. This research stage usually consists of reviewing the relevant professional literature, consulting with appropriate experts, studying Outward Bound's experiences in working with this group,

and, above all, interviewing and assessing the actual students on the course.

One of the primary goals of this research stage is to generate a list of challenges, problematic situations, and developmental passages which characterize the population under study. For example, a list of "high risk of relapse situations" might be a useful tool if one were applying Outward Bound to alcoholics or addicts. A similar list for standard-course adolescents might be comprised of common developmental challenges such as coping with identity crises, learning to handle peer pressure, and adapting to changing relationships with parents. Other lists could be made for the key experiences which typically concern corporate managers, midlife adults, Vietnam Veterans, or adolescent substance abusers.

The Metaphoric Model is active and directive. As a result, its ethical and effective employment requires a complete and accurate assessment. One can easily imagine what might have occurred in the example above if sexism had not been an issue for the corporate students. In that case, the introduction would have been an irrelevant distraction from the more salient issues actually facing the participants. Even worse, the introduction might have interefered with their ability to gain anything from the exercise. The participants might have become angry at the instructor's imposition of the sexism issue or so concerned about conforming that they disregard their own needs.

2. Structured Introductions:—
Once the assessment is complete, the MM instructor frames the course events so that the Outward Bound experiences become psychologically identical to real life challenges. This creation of a psychologically identical context often rests on the use of structured verbal introductions which, as in the ex-

ample above, are delivered immediately prior to the actual event.

The Metaphoric Model, however, recognizes that verbal introductions are not the only way to make an Outward Bound event into an experiential metaphor. Every student approaches every Outward Bound event in the context of all of their previous experiences and knowledge. For example, a student will perceive the first event on a course in the context of all that he has heard and read about Outward Bound. Later on in the course, all of the previous course experiences and debriefings become a composite introduction to the next event. Taking this a bit farther, one can argue that the student's entire life history is an introduction to the event; obviously, a student's personality and experiences will have a significant effect on how an Outward Bound activity is perceived and understood.

This implicit introduction to an Outward Bound event can be called, in deference to the tendency to adopt computer terminology, the "default" introduction. Default, as used herein, refers to the way a student will understand an activity if the instructor provides no introduction. An MM instructor is often satisfied to leave this default introduction in place, preferring it over any structured introduction. In making such a decision, however, the instructor makes a conscious choice that the default introduction is appropriate; if he believes otherwise, he will choose to alter the default using a structured introduction.

3. Double Bind Technology:—
The Metaphoric Model transforms the literal wilderness challenges into metaphors for salient challenges in a student's daily life. This suggests that the third generation approach makes it more difficult for students to have a success on the Outward

Bound event; not only must they master the physical challenge, they must succeed at the metaphoric challenge as well. In the example offered above, the Wall, it is often quite difficult for groups to succeed at the physical challenge. In the context of the sexism introduction, this difficulty becomes magnified. Not only do they have to go over the Wall, full success requires them to use atypical egalitarian leadership styles.

When the Metaphoric Model is employed correctly, students must operate at their physical as well as their psychological and existential limits. The presence of this extra challenge suggests that MM students will have greater needs for support and motivation. The Metaphoric Model uses the paradoxical model to provide this extra motivation and support. In the example above, the paradoxical technique of "prediction of failure" was used to enhance the group's motivation to master the Wall in an egalitarian style.

To explain the paradoxical model briefly is no easy task. The dictionary defines paradox as "an argument that derives self-contradictory conclusions by valid deduction from acceptable premises." As the definition implies, the approach rests on the instructor's ability to give the student a series of logical and compelling statements which, when followed, lead the student into a contradictory position where typical defenses, denials, or fears become difficult or impossible to maintain. The most common paradoxical technique is the "symptom prescription;" in a symptom prescription, the client or student is encouraged to become even more symptomatic.

The difference between a paradoxical approach to change and a traditional confrontive, supportive, suggestive approach is like compar-

ing Aikido with boxing. In boxing, the direct approach of striking out at the opponent creates strong resistance: either defense or counterattack. In Aikido, the opponent's own momentum is used against him, often in surprising ways, and a minimum of effort creates surprisingly powerful results.

Similarly, the employment of direct techniques such as support, advice, inspiration, or confrontation with students often leads to resistance. In such instances, it can be useful to employ an indirect or paradoxical approach which utilizes the student's own typical behaviors, feelings, and beliefs as levers for change. In the corporate example above, directly suggesting that they had sexist tendencies might have been met with denial or resistance. The indirect suggestion that they would find it difficult to avoid emulating the sexist strategies of other corporate groups by-passed the denial and resistance and enhanced motivation.

A full description of the paradoxical approach is not possible given the space constraints of this paper. Interested readers are referred to the bibliography (c.f., Fisch et al. 1983, Haley 1973, Lankton and Lankton 1983, Madanes 1984, Weeks and L'Abate 1982). However, a simplified set of characteristics defining most paradoxical interventions is included below and another example of the use of paradox on an Outward Bound course appears later in this paper.

a. *Direct or Indirect?:*—The first step consists of deciding whether to use direct or indirect (paradoxical) techniques. Direct techniques refer to common sense, logical approaches such as inspiration, support, confrontation, reasoning, and argument. Such approaches are sometimes problematic because they can lead to

denial, defensiveness, and resistance. It is time consuming, energy-intensive, and difficult to surmount this resistance. If it is anticipated that these types of problems will occur, it is best to avoid them by using indirect techniques.

b. *Encourage the Problematic Behavior:*—If it is likely that the problem behavior will occur despite admonitions to the contrary, the paradoxical instructor does not fight the inevitable. Instead, he or she generally follows some variation on a strategy which encourages the student to emit the target behavior. In the example above, the students were implicitly encouraged to emit sexist behavior by mentioning that most groups practice it on the Wall. However, the meaning, the context, the amount, the duration, or the exact form of the behavior is subtly altered so that manifesting the behavior has a new feeling or achieves different results.

c. *Reframing:*—Both the encouragement of the behavior and its subtle alteration are justified by reframing. Sometimes, as in the example above, the reframing labels a conscious choice (sexist leadership style) as unconscious or inevitable; this is usually done in "prediction of failure" paradoxes. At other times the reframing rests on a rationale describing the positive aspects of practicing the behavior. For example, an

anxious student before a rock climb could be instructed to meditate on his anxiety since "anxiety leads to caution and caution is important at Outward Bound."

d. *Results:*—Frequently, the result of such an approach is a minimization or cessation of the problematic behavior. This occurs because the instructor's encouragement of the action and/or the subtle modifications of its practice have made it unappealing. In the anxiety/rock climbing example above, encouraging a student to meditate on his fears disrupts his typical strategy of trying to hold the fears at bay. Often, simply disrupting typical strategies is enough to radically alter a student's approach to the situation.

Clearly, this brief description of the paradoxical approach fails to do justice to this complex topic. For this paper, it is simply useful to understand that the paradoxical approach is included in the Metaphoric Model as a way to enhance student motivation and success, an enhancement which is required by the greater demands placed on students by making Outward Bound activities metaphorical *before* the students attempt to master them.

4. The Primacy of Experience:—The Metaphoric Model assumes that learning is maximized when it occurs in the midst of the experience. As will be discussed below in further detail, this type of experiential learning is superior to learning which primarily depends on reflection or other cognitive processes.

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The MM approach rests on a basic assumption about learning and transference: an Outward Bound experience can be psychologically equivalent to a situation in one's daily life. In an earlier work (Bacon 1983), I discussed the mechanisms of this metaphoric equivalence. The connection between Outward Bound course events and real-life situations rests on the isomorphism of the experiences—the one-to-one correspondence between the components of the daily life experience and the Outward Bound event.

This is a critical point: in profoundly isomorphic metaphors, the student will be living two realities simultaneously. In literal reality, he will be having an Outward Bound course experience; in psychological reality, he will be having both the course experience and the correspondent real-life experience. The mechanism of the transderivational search ties the two experiences together so tightly that one cannot be separated from the other.

When two experiences are tied together this intimately, the established strategy of the real-life experience will usually prevail and the metaphoric experience will be executed in the same style as the real-life experience. If the student usually handles the situation well, he or she will have a success during the metaphoric experience, and if usually handled poorly, will have a failure. However, the Outward Bound course is explicitly organized to facilitate success experiences. When failure strategies are encountered, the instructor, the patrol, and course format help generate a counter-typical resolution to the metaphoric challenge—a

resolution that gives the student a success experience. In achieving this success experience, the student has installed a new strategy. He or she now has two ways of responding to the situation: the old way, which leads to failure and decreased self-esteem, and the new approach, which demonstrably leads to mastery. And this new strategy will now be available in any real-life situations that are isomorphic with the metaphoric experience.

The concept of simultaneously living two realities is, of course, an ideal. In practice, the metaphor is never perfectly isomorphic with the real-life situation; even psychologically speaking, the metaphoric and real-life experiences do not perfectly merge. But there is no question that in well-formed metaphors there will be profound and meaningful links with isomorphic real-life experiences. People who have had a metaphoric experience in which the outcome has been successfully altered will have reorganized their typical life strategies. (p. 9-10)

Clearly this sort of equivalence of separate experiences occurs fortuitously and somewhat randomly on both Outward Bound courses and at other times in people's lives. Many seemingly coincidental and spontaneous insights are due to this equivalence. In the context of understanding this isomorphic process, one can restate the aim of the MM approach: it attempts—consciously, carefully, and ethically—to facilitate this process of equivalency for the benefit and learning of Outward Bound students. Successful passage through a metaphorically equivalent experience gives students a powerful positive

memory which is almost as compelling as the experience of mastering the real-life challenge. But what if a student has a literal failure experience on an Outward Bound course? What if he or she tips over in the rapids or cannot complete the rock climb?

Of course the Metaphoric Model does not guarantee that all activities will result in literal successes. For example, suppose the corporate managers made it over the Wall using sexist leadership styles. The post-activity debriefing would probably focus on the group's inability to operate in an egalitarian manner in spite of a strong motivation to avoid sexism. This type of discussion is as dependent on reflection and insight as a debriefing conducted by second generation instructors; the difference, of course, is that some time was saved by preestablishing the metaphoric nature of the Wall before experiencing it. Furthermore, the students will be applying the tools of reflection and insight to the question of "Why couldn't we change old habits when we were trying?" instead of "Wasn't our performance on the Wall just like the leadership styles typically employed back at the corporation?"

Clearly, the Metaphoric Model continues to endorse the utility of insight and reflection. However, their importance is deemphasized in comparison with the power of learning in the midst of experience. Moreover, the MM approach often creates student experiences which allow reflection and insight to operate more easily, more powerfully, and more graphically. Finally, as will be demonstrated below, the employment of the paradoxical approach tends to minimize student attempts to rationalize or discount their Outward Bound behaviors.

In order to illustrate the four characteristics which define the Metaphoric Model, another example, this one from an Outward Bound course for alcoholics, will be offered. The following introduction attempts to

make an Outward Bound ropes course experience metaphorically equivalent to a "high risk of relapse" situation. The students will be required to handle an experience related to exposure to stimuli associated with alcohol; in other words, they will receive some training in how to resist temptation. As one might expect, research suggests that exposure to such stimuli often results in a drinking relapse.

"I'm sure that many of you have heard descriptions of this next activity: the ropes course. As you can see, it's a big jungle gym in the trees. But it's a jungle gym which tends to have a large impact on students; many of them talk more about this than anything else on the course. Most of them talk about how frightening it was.

"From our point of view though, we don't use it to practice courage or risk taking or anything like that. What good would that be? Does it really help your sobriety to be able to walk a narrow log between two trees? Does the fact that you can do that mean you won't take a drink? No, it doesn't mean that.

"But we do think the ropes course does have something to do with sobriety, and I'll tell you why. At some point on this ropes course we expect that you'll feel some degree of challenge, risk, maybe even fear. And we want you to feel that, not because we want you to experience those things for their own sake, not because we think being scared is good for you, but for another reason. Because when we see that you are in the midst of a serious challenge, we're going to do a rather strange thing.

"But before telling you exactly what we're going to do, I need to diverge for a moment. Research has shown that many alcoholics return to drinking because they can't resist temptation. You know, like the temptation of passing by your old favorite bar or having a friend or acquaintance invite you out for "just one," or whatever. So we've designed this particular ropes course activity with this temptation situation in mind.

"I know you are all used to depending on staff for support for your sobriety and you have probably also gotten used to the idea that the Outward Bound instructors are on your side; but today, because we think it'll help your sobriety, we're going to reverse that. Out there in the real world, you're going to be tempted; and when that happens, you're going to be all alone. And it may be your best friend pushing alcohol on you just when you want a drink real badly.

"Now, what we're going to do here is, just when it gets real hard on the ropes course and you're really tempted to quit, we—that is, the instructors— are going to try and talk you into quitting. That's right; instead of offering support or help, we're going to try and get you to come down or, at least, we're going to suggest that you only have it in you to do it the easy way. You might hear us say, "Hey Joe, you've done enough." Or, "It's OK to come down; this doesn't really have to do with sobriety." Or, "You've already done as much as can be expected of you given your fear of heights. Why don't you just come down now?"

"What I'm saying is, you can't trust us on this one. Or maybe I'm saying that you need to trust your own ability to know what's right and do it no matter what gets in your way. We want you to know that in reality, we all hope that you'll complete the ropes course. And I can tell you that right now in a very clear manner. It would please us all, if every one of you has a total success. But we might not be acting like that in a few minutes. During the course, from time to time you'll see and hear us trying our best to tempt you or your friends. You'll see us trying to talk you off of the ropes course. Of course, most of the time we'll just be helping out, just like we usually do, but when the crunch is on, you may notice that we've shifted into another perspective.

"Do all of you understand this? Do you know why we may be encouraging quitting or taking the easy way out?" (Get answers and respond appropriately.)

Typical Results.—When this introduction is offered in a caring and concerned manner, it typically results in an enhancement of the alcoholics' motivation to complete the ropes course regardless of their fear of heights, lack of strength, or whatever. They act as if they are more afraid of succumbing to the temptations offered by the instructors than of the actual ropes course events. The introduction often results in more events attempted and more student successes than a standard introduction. It also has the fringe benefit of eliminating the "talk the hesitant student over the high beam" role of the instructor. This type of support sometimes degenerates into a somewhat bizarre power struggle where

the student attempts to prove he cannot do it and the instructor argues that he can. Not only are these types of inappropriate encounters eliminated, the student feels that he has accomplished the course completely on his own.

When there is a succumbing to temptation—an actual withdrawal from the ropes course—the debriefing is almost guaranteed to go well. The withdrawal is perceived by the entire student group as a meaningful event, as a sign that the quitter is vulnerable to the kind of temptation which will be encountered on the street. Attempts to discount the withdrawal by the use of excuses like fear of heights or lack of strength are disputed energetically by the group. The group tends to break through the alcoholic's denial and there are significant therapeutic gains both for the withdrawer and for the other group members.

This example has all of the characteristic marks of the Metaphoric Model. First, it is based on appropriate assessment findings; alcoholics generally do need to learn how to handle temptation. Second, it uses a structured introduction to make the ropes course, an experience which in a literal sense has little to do with their lives, into something which is highly relevant. Third, it employs the paradoxical technique of "prescribing the symptom." And fourth, the alcoholics' primary learning will occur in the midst of experience as they choose how to respond to the instructor's solicitations in the context of their own fear and doubt. Finally, if they have had a failure experience, the debriefing is set up in such a way that there is a minimal opportunity to discount the significance and importance of their Outward Bound experience. Above all else, the introduction ensures that the alcoholics will not literally be climbing around in the trees; rather, they will be experientially confronting a kind of temptation that is directly related to sobriety.

The Ascendency of Experience over Insight

Outward Bound theorists have remained true to Dewey's famous dictum that experiential learning is not simply the experience but the reflection on experience. For example, Gager (1977) makes the following comments about the centrality of thought and insight to learning and transference:

> The opportunity for *critical analysis and reflection* is the final ingredient in the process flow. In this context I am referring to the need to 1) link practice with theory; 2) reflect upon and examine one's experience in order for it to "take;" and 3) attempt to make a transfer from what is learned through experience to broader considerations. Experience alone does not automatically produce learning. (p. 10, underlining in original)

Putnam (1977) comments in a similar vein.

> An Outward Bound course necessarily allows time for reflection on experience...The event or task is experienced, and this leads to reflective observation, which is followed by an intellectual "sorting-out" process. The final stage of the cycle sees the experimental application of the new concepts, thus providing further experience...Central to this process is the responsibility of the participant, helped by his companions and the staff, to review and evaluate continuously what occurs during and following the course. This function may be carried out in many different ways, and may include the preparation of a formal assessment or self-assessment in written or recorded form. (p. 5)

Finally, Kalisch (1979) discusses his view of the function of the intellect in the Outward Bound learning process.

> After an experience has been rendered into words it can then be subjected to disciplined thinking. This is the real work of learning...Real learning occurs when a student actively utilizes his awareness in a way which affects his self-concept and his relationship to the existing environment. True logical conclusions are reached and stand ready for integration and implementation...The instructor's task is to facilitate as much reflective thinking as possible. Yet, this is not to imply that the program should center itself entirely around this objective. That would indicate a misunderstanding of its role in learning. Experience provides the raw material for thought; in the absence of new information gained by personal experience, reflection can become a repugnant and pointless activity. (p. 69-70)

Gager, Putnam, and Kalisch all place great emphasis on the centrality of reflection, analysis, and insight for the Outward Bound learning process. As noted above, the Metaphoric Model has no direct quarrel with reflection, analysis, or insight; in fact, these tools are essential when debriefing certain activities.

However, these factors do not need to be the center of the Outward Bound process. In the Metaphoric Model, the primary focus is on setting up the experience so that learning and behavioral change are accomplished in the midst of the course experience. Given that the introduction has made the course activity psychologically equivalent to salient real-life challenges, it is assumed that a success at the course activity automatically transfers and generalizes.

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Post-activity discussions are primarily reserved for ratifying already existent learnings.

"Ratify," as used here, describes a process in which an individual offers testimony about new behaviors or insights. The group then gives that person support by agreeing that he or she did indeed do something or learn something valuable and worthwhile. In addition, the student will often implicitly or explicitly state his or her intention to reorganize his or her life around these new self-perceptions and will look to the group for approval and consensual validation. In the ropes course example, the process of ratification would be operating if an alcoholic were to discuss the temptation to come down from the trees in the midst of the activity but then mastered him- or herself and persevered in good style. The group would reinforce these choices and implicitly suggest that it would be good to continue to use this new strategy in future situations.

This type of ratification is very important in terms of solidifying and stabilizing experiential learning. Most human beings need some sort of consensual agreement to concretize new self-perceptions and new world views. For example, Watzlawick (1984) argues that reality is socially constructed; that is, he believes that an individual's self and world perception is constantly supported by feedback from a network of social contacts. Watkins (1986) believes that patients attempting to change through psychotherapy need to articulate and receive support to form a new self-image. Watkins thinks this is especially important following changes which occur secondary to powerful effective experiences such as catharsis or abreactions. In fact, he argues that the ratification process is so critical that clients who do not experience it may have difficulty sustaining their personality improvements.

The Metaphoric Model's emphasis on experience and its complementary deemphasis on reflection and insight occur for two reasons. First, there is a wish to underscore Outward Bound's commitment to *experiential* learning. Increasing Outward Bound's ability to work with experience is to further develop Outward Bound's indigenous approach to human development.

To develop reflection and insight on experience is to follow education and psychology. There is nothing intrinsically wrong with emulating these worthwhile fields; however, it distracts from Outward Bound's unique purview: the use of adventure-oriented experience. Besides, it is unlikely that Outward Bound instructors will ever be quite as effective at facilitating reflection, group process, and insight as educators and psychologists. Why concentrate on someone else's specialization? Why not concentrate on what Outward Bound does best?

The second reason for this deemphasis on insight is the growing debate in the psychotherapy field over whether insight and reflection are necessary or even helpful factors in character development. This is a somewhat heretical debate. Psychodynamic therapy and its school of thought have dominated character development theory for almost a century. Its influence is so strong that the twin factors prized so highly by dynamic therapists—insight and reflection—are considered to be absolutely necessary for significant personal growth.

However, in the 1960's and 1970's, two other schools of thought emerged which began to challenge psychodynamic psychotherapy's assumptions about the fundamental importance of insight. The first of these was the cognitive/behavioral school. Alfred Bandura, a member of this school of thought and one of the most prominent psychologists in America, reviewed the research on psychotherapy and wrote the following about insight:

It is evident from the results of interpretive approaches that a therapist who leads his clients to believe that insight will alleviate their behavioral malfunctioning is unlikely to accomplish the changes he implies (Bandura 1969, p. 103).

A second group of theorists attacking the insight concept belonged to the strategic therapy school. Haley (1973) gives literally dozens of examples of profound personal changes occurring in people's lives without insight and went so far as to write a series of satiric essays suggesting that the psychodynamic devotion to insight could actually keep people from changing (Haley 1986). Milton Erickson commented that "insight into the past may be somewhat educational, but insight into the past isn't going to change the past (Zeig 1980, p. 269)." And as a final example, Weeks and L'Abate (1982), two noted psychologists, also denigrate the efficacy of insight:

In fact, it appears that some clients use insight-oriented therapy to avoid making changes. Insight may help clients better understand themselves and their relationships to others, but this fact does not mean they will change their behavior. The fact that couples change more rapidly in problem-solving therapy than in insight therapy has recently been demonstrated empirically by Slipp and Kressel. (p. 82)

Given these possible limitations on the efficacy of insight and reflection and Outward Bound's traditional emphasis on experience, the Metaphoric Model chooses to deemphasize cognitions and prioritize behavioral change. But not simply any behavioral change—rather, it emphasizes generating new behavior in the context of an experience which is metaphorically equivalent to a prob-

lematic or challenging situation in the student's daily life.

Success in this context leads to a different type of insight: an experiential rather than a cognitive insight. Having a relevant success experience creates a gut level understanding of one's former behaviors. For example, how often people who have just solved a personal problem comment, "Now, in hindsight, I see so clearly what I was doing wrong—how I caused the entire situation." Such a phrase is uttered with relative ease once the person has had a success and is sure that they have mastered the difficulty. Conversely, insight without the prior experience of an actual success often generates a statement which lacks confidence, e.g., "I see what I'm doing wrong and I'll try to change it, but I'm not sure that I can."

The Metaphoric Model generates the comfortable and confident insights that accompany an already solved problem. Conversely, the MST and OBP models foster a different type of insight, an insight based on reflection, discussion, and cognitive processes. This insight is not founded on an experiential success; rather, it is based on abstract, cognitive connections between Outward Bound experiences and real-life challenges. Even after these connections have been made, the best that the student can hope for is a relatively weak, intellectual insight into his or her tendencies to be caught in unproductive patterns. Perhaps this new knowledge will help, but the student is not sure.

In spite of the weakness of OBP insight when compared with the Metaphoric Model's experiential strategies, it is still vastly superior to the type of insight fostered in a clinic or doctor's office. At least second generation insight is based on an analysis of concrete and graphic behaviors, behaviors which have been emitted in stressful, challenging situations and witnessed by an entire group of people. When that same group attempts to foster insight in a person, it tends to be achieved more quickly and easily than the abstract struggle with second-hand events practiced in a clinic.

Of course, this discussion of the differences in power of different types of insight is a bit oversimplified. Even the most effective MM introduction only makes a course event similar to the real-life situation; even psychologically speaking, the two experiences are never totally identical. Given that fact, a metaphoric course success is not completely equivalent to mastery of the real-life challenge.

Furthermore, in a second generation approach, after a student gains intellectual insight, he or she may be able to test that insight on the next Outward Bound activity. If he or she achieves an experiential success there, one can argue that the second generation model also provides insight which is grounded in experience. To use the terminology introduced previously, the students benefit from a default introduction consisting of their recent insight into their behavior.

It is also possible for a gifted student to realize the metaphorical nature of a course activity in the midst of that activity without any help from an introduction. In summary, there are a number of factors that can lead a student to experiential learning even on a MST or an OBP course. Yet in spite of these qualifying examples, one can still maintain that the Metaphoric Model offers a profound, powerful, and rapidly forced type of insight which is much superior to the cognitive insight achieved by earlier curriculum models.

Interestingly, the Metaphoric Model's experientially derived form of insight is similar to something strategic therapists call pragmatic insight. Note that in the following passage, Weeks and L'Abate (1982) differentiate pragmatic insight from traditional insight by the degree to which it is grounded in experience.

The kind of insight produced from a paradoxical intervention is different from that produced by reflection or interpretation (i.e., by words). Most insights are generated by the therapist's verbalizations and the impact on the client is questionable. We believe most insights are nothing more than cognitions—thoughts about overt behavior. A paradox, on the other hand, can produce a *pragmatic* insight. This kind of insight emerges from the systematic manipulation of the client by the therapist, but it is a self-generated insight. The therapist merely provides a structure for an experience— not the interpretation of that experience. The insight is a perceptual reorganization grounded in the client's immediate experience. Its truth is utterly convincing and inescapable. It is such a powerful insight that the client may slip into a trance state as the insight occurs. It might be noted that using the term pragmatic to describe this type of insight is consistent with William James' (1907) pragmatic theory of truth. For James, truth referred to whether an idea worked, and whether any idea worked depended upon some form of action leading to an experience. (p. 143, underlining and parentheses in original)

It is clear from this quote that the authors are not actually anti-insight; rather, they may be critical of traditional forms of insight, but in favor of "pragmatic" insights which actually lead to change.

It is also interesting to note their insistence that this pragmatic insight is self-generated insight, albeit a *self-generated* insight which arises from a structured experience. Similarly, the Metaphoric Model is paradoxically

both highly directive and strongly committed to ensuring students' control over their own learning. While there is a strong interest in minimizing a student's tendencies to repeat unsuccessful strategies, there is an equal devotion to allowing him or her to decide what type of choices to make for the future. In the example of the Wall, the sexist leadership strategies were discouraged but the students were *not* told how to act to be egalitarian. They developed their own approach to egalitarian leadership without any influence from the instructor.

In conclusion, the difference between the quality of insight generated by the two approaches is dependent on the meaning of the Outward Bound activity *as it is experienced*. If an experience can be shaped so that it truly and accurately represents the real-life challenge, then a simple success at that experience leads to rapid, profound insight. The MST and OBP approaches work slowly and are comparatively weak because they rely on forming theoretical, cognitive links between the Outward Bound experience and real life. But when those connections are grounded in experience, then an Outward Bound success leads to relatively effortless insight and change.

Literature Cited

Bacon, S. 1983. The conscious use of metaphor in Outward Bound. Denver, CO: Colorado Outward Bound Press.

Bandura, Alfred. 1969. Principles of behavior modification. New York: Holt, Rhinehart & Winston.

Burton, Leslie. 1981. A critical analysis and review of the research on Outward Bound and related programs. New Jersey: Rutgers University, State University of New Jersey. Ph.D. dissertation.

Fisch, R.; Weakland, J.; Segal, L. 1983. The tactics of change: doing therapy briefly. San Francisco: Jossey-Bass Publishers.

Fletcher, B. A. 1970. Students of Outward Bound Schools in Great Britain: a follow-up study. England: University of Bristol School of Education. Unpublished manuscript.

Gager, Ron. 1977. Experiential education: strengthening the learning process. Denver, CO: Colorado Outward Bound School. Unpublished manuscript.

Haley, Jay. 1973. Uncommon therapy. New York: W. W. Norton & Co.

Haley, Jay. 1986. Power tactics of Jesus Christ and other essays, 2nd edition. New York: Triangle Press.

James, Thomas. 1980. Can the mountains speak for themselves? Denver, CO: Colorado Outward Bound School. Unpublished manuscript.

Kalisch, Ken. 1979. The role of the instructor in the Outward Bound educational process. Three Lakes, WI: Ken Kalisch Press.

Lankton, S.; Lankton, C. 1983. The answer within: a clinical framework of Ericksonian hypnotherapy. New York: Brunner/Mazel, Inc.

Madanes, Cloe. 1984. Strategic family therapy. San Francisco, CA: Jossey-Bass Publishers.

McGee, Lynn. 1985. It's a jungle out there. Amtrak Express (August/September): 18-49.

Putnam, Roger. 1977. A rationale for Outward Bound. England: Eskdale Outward Bound School. Unpublished manuscript.

Shore, Arnold. 1976. Outward Bound: a reference volume. Greenwich, CT: Outward Bound Press.

Watkins, John G. 1986. Hypnotherapeutic techniques: volume 1 of the practice of clinical hypnosis. New York: Irvington Press.

Watzlawick, Paul. 1984. The invented reality. New York: W. W. Norton & Co.

Weeks, G.; L'Abate, L. 1982. Paradoxical psychotherapy: theory and practice with individuals, couples, and families. New York: Brunner/Mazel Publishers.

Zeig, J. 1980. A teaching seminar with Milton Erickson. New York: Brunner/Mazel Publishers.

Benefits Perceived by Past Participants in the NOLS Wind River Wilderness Course: A Methodological Inquiry

B. L. Driver, George L. Peterson, and
A. T. Easley[1]

Abstract.—This study focused on past participants (1974-1984) in the Wind River Wilderness Course (WRWC) of the National Outdoor Leadership School. The methods proved successful for identifying perceived beneficial aspects of the WRWC by past participants. The methods applied were also useful for (1) evaluating how desirable each identified beneficial change was perceived to be; (2) measuring the amount of change that the participants perceived had occurred since they participated in the WRWC; and (3) estimating how much of that perceived beneficial change was attributed to the WRWC.

Public agencies and private firms supply wildland amenity goods and services because of the benefits they provide to individuals and society, and they manage amenity resources to assure benefits in the future. The values of these benefits are appraised both by users' willingness to pay for the goods and services and by non-monetary measures (Driver and Burch, in press; Peterson et al., in press).

Information on the benefits of using wildlands for recreation and related purposes has been a top priority in all of the national recreation research needs assessments that have been made during the past 20 years, the most recent of which was coordinated by the U.S. National Park Service (1981). Despite these assessments, little research using nonmonetary measures has attempted to quantify the magnitude of the benefits, primarily because of its complexity (Driver 1987, Driver et al. 1987). There are literally hundreds of combinations of wildland recreation activities and settings—ranging from those chosen near home to remote locations—that can provide different benefits. There are also many factors

that can interact with an amenity good or service to create benefits. These include age, sex, type of home or work environment, personality, and cognitive style. It is quite difficult to control for the influence of these variables in the research designs. In addition, expensive and complex longitudinal studies must be made, and they should include physiological as well as economic and sociological measures. Because of this complexity, adequate methods have not been developed to identify and quantify the benefits of using wildlands for recreational and other purposes. The exploratory research reported in this paper attempted to improve these methods.

To help reduce the complexity of the study, we selected a user group that evidenced considerable homogeneity in the type of activity and wildland environment selected and in their socioeconomic characteristics. Group members were past participants in the National Outdoor Leadership School's (NOLS) Wind River Wilderness Course. Such a use was timely to study because of the growth in the so-called "adventure recreation" programs (Ewert 1986) and because of the strong support of the study by officials at NOLS.[2]

NOLS is a nonprofit educational institution founded in 1965 by Paul Petzoldt. Its objectives are to teach and develop (1) appreciation of wilderness; (2) techniques that promote competency in the safe use of wilderness with minimal adverse environmental impact; and (3) outdoor leadership skills. Contrasted with other "adventure recreation" programs, such as Outward Bound, NOLS courses do not focus as much on personal challenge and growth in self-confidence; rather they concentrate on the development of the participants' wilderness skills, minimum impact camping techniques, and development of leadership. For NOLS, wilderness is not viewed so much as a challenge as a comfortable and enjoyable place for those who have learned appropriate skills and techniques.

Currently, NOLS provides a variety of courses on public lands to more than 2,000 students annually, primarily near its headquarters in Lander, Wyo., but also at four branch schools in Alaska; Baja, Mexico; the north Cascades in the State of Washington; and in Kenya, Africa. The Wind River Wilderness Course in Wyoming has been one of the most highly attended since NOLS started. During 1985, 1986, and 1987, enrollments were 192, 251, and 301, respectively. That course takes place in the summer months, lasts 5 weeks, and has three NOLS instructors for up to 17 students. Most of the enrollees are

[1]Driver and Peterson are Research Forester and Research Engineer, respectively, with the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, in Fort Collins, Colo. Easley is Dean of the School of Natural Resources, Sir Sanford Fleming College, Lindsay, Ontario, Canada.

16-20 years old, and there is a mix of male and female students in most courses. The participants come from throughout the United States. The courses are physically rigorous and typically occur in extremely rough terrain. A typical curriculum is outlined in Easley et al. (1986: 379).

Although literally hundreds of studies have been made of participant responses to Outward Bound type courses (Burton 1981, Ewert 1983) and to therapeutic programs (Barcus and Bergenson 1982, Gibson 1979, Levitt 1982), relatively little research has been done at NOLS. One study by Henry and Driver (1974) looked at the motivations of the summer 1972 participants in the NOLS Mountaineering course. Another study by Easley et al. (1986) appraised the perceived gains in self-confidence, outdoor skills, and leadership skills by 1,560 participants in 39 standard NOLS courses in Wyoming in 1984, as well as the influence of perceived instructor effectiveness on these gains. A third study by Williams et al. (in press) examined the types of experiences desired and obtained from Wyoming NOLS courses by the students.

The four objectives of this exploratory study were to develop and test methodologies to:

1. Determine how well past participants in the NOLS Wind River Wilderness Course (hereafter referred to as WRWC) could identify and articulate perceived benefits.

2. Measure the participants' perceptions of:

   a. The relative desirability of realizing each type of perceived benefit.

   b. The degree to which they have realized each benefit since they participated in the WRWC.

   c. How much influence participation in the course had on the realization of the benefit.

3. Determine if the participants differed in their dispositions toward the course and if those market segments most favorably disposed differed in benefits perceived from those who held less favorable attitudes.

4. Determine if different types of participants varied in the benefits perceived.

Methods

The survey research design consisted of two questionnaires mailed at different times. The first was open-ended and was used to define possible benefits. The second, derived from the first, used a fixed list format to quantify the perceived benefits and other variables measured.

The study was a cooperative effort between the Rocky Mountain Forest and Range Experiment Station and NOLS. The questionnaires were prepared by the authors then reviewed by NOLS officials. Selection of the sample was done at NOLS, as was mailing of all the questionnaires.

Sampling

To test for the effect of time on the perception of benefit, participants were sampled who had participated in the WRWC during different years between 1974 and 1983. For this exploratory study, the design called for sampling at least 200 participants for each of the designated years. The total sample of 1,282 participants comprised the following: for 1974—343; 1975—347; 1981—196; 1982—199; 1983—197. Higher numbers were chosen for 1974 and 1975 because of

the higher likelihood of noncurrent (nondeliverable) addresses for those years. Sampling of rosters of past participants of specific WRWC's was done randomly at NOLS, with all participants in a chosen course included in the sample frame. Only respondents to the first questionnaire were sent the second one.

Questionnaires

The first brief, 2-page questionnaire solicited information about the benefits the participants perceived from the course and those aspects of the course that were the most beneficial. The purposes of the study were explained in a cover letter signed by Jim Ratz, executive director of NOLS. The instructional set for the benefits question was as follows:

Please think back to when you arrived in Lander, Wyoming, to begin your Wind River Wilderness Course. Then think about how participation in that course might have benefited you, even if in just a small way or for a short period of time. Think about whether the course might have influenced desirable changes in your skills, attitudes, knowledge or behavior—from then until now.

Then, the participants were asked to check whether they thought they had not benefited, they thought they benefited but could not describe how, or they believed they benefited and could describe, at least generally, some of those benefits. If they selected the last option, they were asked to describe, in a space provided, all of the influences of the course of benefit to them.

The second questionnaire was developed using responses from the first. It included three sections. Section I, in three parts, included a list of possible benefit items selected following a very detailed and careful

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content analysis of all responses to the benefit section of the first, open-ended questionnaire. In that analysis all dimensions of beneficial change attributed to the WRWC on the first questionnaire were first listed separately and then grouped into conceptually related classes with frequencies recorded for identical or very similar benefit themes that were articulated by the respondents. These groups of benefit themes were then used to write 81 benefit items. To the extent possible, the wordings used by the respondents were employed to write the items. Several similar items were included to develop scales only for those benefit themes that were mentioned most frequently by several respondents. No special attempt was made to include items that reflected NOLS's teaching objectives for the course. Rather, the items reflected the past participants' responses.

The benefit themes varied considerably in their concreteness, the focus of their impact, and their scope. Several were rather abstract ("appreciation of the power of nature") and others specific ("being physically fit"). Some were instrumentalities for other changes ("better eating habits"), while others denoted desirable ends ("desirable weight gain or loss"). Several reflected ideals ("more compassionate") and still others changes in behavior ("reduced use of tobacco"). No attempt was made in this exploratory research to organize these various themes other than through the cluster analyses explained later.

To avoid bias, the 81 benefit items obtained from the first questionnaire were listed in the second questionnaire under the label "Dimensions of Personal Change" rather than as "perceived benefits." We refer to them in this paper as perceived benefits because those 81 items were derived from the open-ended questionnaire that explicitly solicited statements of how the participants felt they had benefited. The perceived

benefit label is also fitting because the subsequently reported responses to the second questionnaire show that all 81 items were rated as desirable, meaning they were perceived to be beneficial.

Part 1 of Section I of the second questionnaire asked the respondents to report how desirable or undesirable they thought each item was; this is called the "Desirability Response." Part 2 of Section I solicited information on how much the respondents thought they had changed along each of the 81 dimensions since they started the WRWC; this is called the "Perceived Change Response." Part 3 of Section I asked how much the respondents believed that any changes reported for Part 2 could be attributed to the WRWC; this is called the "Influence of NOLS Response."[3] These labels are used throughout the remainder of this paper.

Section II contained a list of 16 favorable and unfavorable statements about the course. Students were asked to rate their degree of agreement/disagreement with each statement. Because the purpose was to measure affective disposition toward the course, using a multiple-item inventory, these statements are called "disposition items." Section III collected selected socioeconomic information.

The first questionnaire was mailed in the spring of 1986, and the second one a year later only to the respondents of the first. Because this was primarily an exploratory methods-testing study, only one mailing was made of each questionnaire, meaning that a high response rate was not expected.

Analysis

The 81 benefit items and 16 disposition items were cluster analyzed using three cross-checking algorithms (I-Clust, Isodata, and factor

[3]It was not called the "Influence of WRWC Response" because it was judged that NOLS might have had an influence beyond that course.

analysis) to develop what are termed "Perceived Benefit" and "Disposition" scales. In addition, respondents, or cases, were clustered on the disposition scales to define disposition types. Means were computed for the perceived benefit scales for the Desirability, Perceived Change, and Influence of NOLS parts of Section I and to the dispositions scales of Section II. Frequency distributions were calculated for categories of the socioeconomic variables, which were combined into larger groups to provide adequate sample sizes for the cross-tabular analyses.

MANOVA and ANOVA (using the LSD procedure) were used to test for differences in response to the benefit and disposition scales by these subgroups (e.g., year of participation in the course). However, these tests should be viewed as illustrative of the applications of methods in this exploratory study and as descriptive of variables that differ and not as confirmation of specific differences; the weak statistical base caused by the low response rate prevents confirmatory hypothesis testing.

Results and Interpretation

Response Rates

Of the 1,281 open-ended questionnaires that were mailed (first class), many were returned to NOLS as undeliverable, but no definitive count was maintained. We suspect that many were also sent to the respondents' previous home address and not forwarded by their parents. Of the 292 usable questionnaires (23% of all mailed) returned, 110 (38%) provided useful responses to the one mailing of the second questionnaire. No test of nonresponse bias was made, and our response rate does not permit generalization of the results of this exploratory study to the overall population.

Benefit Scales and Disposition

Table 1 shows the 19 perceived benefit scales that resulted from the

Table 1.—Item composition of the perceived benefit scales.

1. Humility
   Less selfish.
   More humble.
2. Eating habits
   Greater awareness of benefits of good nutrition.
   Increased knowledge about what constitutes good nutrition.
   Better eating habits.
3. Nonmaterial values
   Knowing that I can really do without many material things.
   Greater appreciation of the spiritual benefits of wildlands.
4. Trust others
   More trusting of others.
   Improved ability to trust others.
5. Systematic and positive
   More positive attitude.
   Improved ability to plan my actions.
   Knowing that a poor attitude is detrimental to my performance.
   Ability to face challenges with less hesitation.
   More organized.
6. Function responsibility
   Ability to function in diverse groups of people.
   Ability to take care of myself.
   Increased sense of personal responsibility.
7. Open efficiency
   Ability to respond favorably to helpful criticism.
   Ability to use my personal energies and resources efficiently.
   Ability to benefit from self-reflection.
   Ability to be more honest with others.
   Knowing that getting the benefits often depends on hard work.
   Ability to express my opinions and personal needs to others.
   Ability to put my everyday problems within a proper perspective.

8. Integrative
   Broader perspectives.
   Greater curiosity.
   Better ability to integrate or to look at the "big picture."
   Better ability to keep cool in tense situations.
   Improved ability to know when it is best to compromise.
9. Leadership
   Ability to follow good leaders.
   Ability to lead others.
   Interpersonal skills.
   Better ability to handle anger and frustration with others.
10. Many balls in the air
    Greater realization that teamwork can be important in getting a job done.
    Ability to handle a wide range of responsibilities.
11. Self-confidence
    Ability to undertake challenging endeavors.
    Improved sense of self-worth.
    Increased self-confidence.
    Greater independence.
    Less fear of failure.
    Feelings of personal competence.
    Greater self-reliance.
12. Understanding
    Increased skills in communication.
    Improved ability to develop and maintain friendships.
    Greater awareness of the need to be able to work effectively with others.
    Improved ability to resolve conflicts with others.
    Better ability to understand other people.
13. Endurance
    Ability to push myself to go on when I feel like stopping, but need to get a job done.
    Knowledge that my personal capacities can be greater than imagined.

14. Can do
    Ability to solve problems better.
    More self-discipline.
    More adaptive to new situations.
    Better judgement.
    More compassionate.
15. Nature understanding
    Better understanding of basic relationships between humans and the natural environment.
    Increased respect for nonhuman life (plants and animals).
    Increased understanding of need to protect natural environments.
    Appreciation of the power of nature.
16. Outdoor skills
    Improved woods or outdoor skills.
    Greater understanding of the natural environment.
    Improved skills in low-impact recreational use of wildlands.
    Knowledge of how to be comfortable in wildlands.
    Better appreciation of the therapeutic values of wildlands.
17. Body care
    Being physically fit.
    Improved motor skills (strength and coordination).
    Reduced use of tobacco.
    Desirable weight loss or gain.
    Get more physical exercise.
    Overcoming a particular habit that I wanted to change.
18. Tolerance
    More sensitive to others.
    More tolerant of others.
    More patient with others.
    Ability to respect points of view that do not agree with yours.
    Increased flexibility.
19. Safety
    More safety conscious.
    Increased knowledge of first-aid.
    Ability to pace myself.

cluster analyses of the 81 dimension-of-change items included in the second questionnaire. That clustering was done separately on responses to the Desirability, Perceived Change, and Influence of NOLS response formats. Most reliance in developing the perceived benefit scales was placed on the clusters formed from the Desirability responses, because it seemed more logical to develop benefit scales from the desirability of the items than on how much the respondents reported they had changed or attributed any change to the course. Such a focus should increase the content validity of the scales.

The questionnaire items making up each scale are shown in table 1. The labels given the scales represent the themes connoted by those items, but they were judgmental. Some labels (No. 7, Open Efficiency; No. 10, Many Balls in the Air; and No. 14, Can Do) can be understood better if the reader looks at the items that comprise the scales.

The 19 perceived benefit scales in table 1 indicate three things. First, the respondents could, without any prompting by way of example, articulate a rather diverse but well-defined set of perceived benefits—one of the most interesting findings of the study. Second, many of the perceived benefits reflect the objectives of the WRWC, which is not too surprising. Third, other types of perceived benefits emerged that have not been promoted by NOLS but that are intuitive within the context of the WRWC. Examples include greater Humility (No. 1) and "more tolerant of others" (under Tolerance, No. 18).

Table 2 shows the alpha reliabilities of the 19 perceived benefit scales and of the two of the three disposition scales comprising more than one item, plus the item composition of those three scales. All reliabilities exceed 0.60, which is commonly viewed as minimally acceptable, and most are considerably higher. The disposition scales reflect three thematic orientations toward the

course—enjoyment, worth about equal the costs, and a nonspecific overall appraisal.

Table 3 shows that most of the 19 perceived benefit scales are moderately to highly intercorrelated—for psychometric scales—on the Desirability, Perceived Change, and Influence of NOLS measures. This is not surprising given that each of the scales measures a construct perceived as beneficial by the respondents. Because each of the 19 scales had statistical properties that permit-

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Table 2.—Alpha reliabilities for the scales and item composition of the disposition scales.

A. Perceived benefit scales

	Scale[a]	Alpha reliabilities		
		Desirability	Perceived change	Influence of NOLS
1.	Humility	0.92	0.69	0.90
2.	Eating habits	.98	.96	.93
3.	Nonmaterial values	.60	.77	.83
4.	Trust others	.94	.92	.83
5.	Systematic and positive	.70	.75	.78
6.	Function responsibility	.94	.88	.82
7.	Open efficiency	.79	.83	.89
8.	Integrative	.96	.95	.91
9.	Leadership	.96	.92	.88
10.	Many balls in the air	.95	.92	.92
11.	Self-confidence	.93	.93	.91
12.	Understanding	.98	.98	.97
13.	Endurance	.96	.89	.87
14.	Can do	.98	.97	.95
15.	Nature understanding	.84	.90	.89
16.	Outdoor skills	.83	.90	.88
17.	Body care	.93	.89	.90
18.	Tolerance	.96	.95	.92
19.	Safety	.92	.86	.76

B. Disposition scales

1. Enjoyment (= 0.75)
   I enjoyed the course.
   I still enjoy thinking about the good times I had on the course.
   My memories of the course are unpleasant.

2. Break Even (= na)
   The course was worth just about what I paid for it.

3. General worth (= 0.70)
   I wish I hadn't taken the course.
   The course was a waste of my time.
   I was disappointed with the course.
   If I had the time, I would like to take a NOLS course again sometime.
   The time course took was well spent.
   The course was not worth the money I paid for it.
   It was a worthwhile experience.

[a]Table 1 gives the item content of each scale.

Table 3.—Pearson correlation coefficients among perceived benefit scales.

Correlations for perceived change (below the diagonal)
Correlations for desirability (above the diagonal)

Benefit scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Humility	X	.37	.36	.55	.68	.36	.67	.57	.39	.49	.56	.47	.34	.63	.44	.37	.46	.47	.52
2. Eating habits	.17	X	.47	.41	.56	.32	.59	.63	.37	.51	.57	.60	.24	.60	.46	.48	.62	.59	.75
3. Nonmaterial values	.36	.33	X	.35	.45	.46	.47	.59	.45	.51	.54	.39	.43	.51	.68	.57	.39	.44	.54
4. Trust others	.43	.31	.32	X	.58	.34	.53	.57	.35	.55	.47	.62	.28	.64	.39	.25	.48	.48	.46
5. Systematic and positive	.48	.41	.40	.46	X	.40	.79	.63	.43	.59	.74	.69	.31	.70	.46	.48	.51	.62	.64
6. Function responsibility	.33	.35	.33	.45	.60	X	.55	.53	.43	.48	.48	.51	.77	.46	.51	.20	.46	.37	.47
7. Open efficiency	.48	.34	.47	.45	.74	.56	X	.70	.54	.67	.73	.78	.41	.81	.54	.37	.52	.65	.63
8. Integrative	.38	.42	.57	.45	.68	.69	.72	X	.59	.68	.68	.74	.48	.81	.64	.41	.55	.79	.70
9. Leadership	.43	.38	.30	.44	.67	.73	.61	.69	X	.51	.50	.55	.78	.51	.51	.25	.50	.47	.51
10. Many balls in the Air	.37	.35	.41	.48	.61	.61	.62	.74	.64	X	.50	.76	.37	.67	.64	.51	.47	.60	.66
11. Self-confidence	.35	.34	.35	.42	.73	.61	.67	.73	.64	.60	X	.65	.45	.82	.56	.52	.59	.74	.71
12. Understanding	.37	.47	.43	.59	.57	.64	.63	.78	.75	.69	.62	X	.41	.78	.46	.27	.50	.73	.62
13. Endurance	.29	.41	.32	.31	.61	.55	.53	.59	.54	.62	.72	.47	X	.44	.50	.19	.48	.32	.39
14. Can do	.43	.40	.52	.58	.64	.66	.65	.83	.69	.64	.76	.76	.61	X	.60	.43	.64	.84	.74
15. Nature understanding	.38	.40	.69	.22	.51	.43	.50	.61	.44	.48	.43	.43	.45	.50	X	.72	.46	.51	.58
16. Outdoor skills	.32	.34	.71	.16	.52	.42	.48	.57	.46	.48	.46	.44	.50	.50	.78	X	.44	.37	.60
17. Body care	.37	.42	.53	.38	.52	.36	.39	.38	.39	.29	.53	.32	.43	.48	.35	.31	X	.51	.66
18. Tolerance	.49	.43	.51	.63	.63	.65	.67	.79	.74	.65	.66	.82	.44	.81	.50	.53	.37	X	.68
19. Safety	.24	.51	.54	.39	.58	.55	.52	.60	.56	.56	.53	.59	.55	.66	.53	.69	.45	.57	X

Correlations for influence of NOLS

Benefit scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Humility	X																		
2. Eating habits	.49	X																	
3. Nonmaterial values	.44	.40	X																
4. Trust others	.49	.60	.40	X															
5. Systematic and positive	.53	.61	.44	.53	X														
6. Function responsibility	.46	.62	.46	.52	.66	X													
7. Open efficiency	.62	.59	.42	.57	.78	.59	X												
8. Integrative	.55	.52	.54	.54	.78	.63	.75	X											
9. Leadership	.50	.62	.44	.57	.63	.82	.67	.66	X										
10. Many balls in the air	.48	.59	.53	.58	.75	.69	.66	.73	.70	X									
11. Self-confidence	.46	.49	.41	.48	.81	.65	.77	.80	.66	.67	X								
12. Understanding	.56	.62	.50	.69	.70	.73	.74	.76	.80	.78	.65	X							
13. Endurance	.34	.40	.40	.34	.61	.53	.61	.51	.56	.57	.72	.46	X						
14. Can do	.56	.62	.51	.67	.75	.68	.78	.76	.72	.71	.84	.74	.64	X					
15. Nature understanding	.39	.42	.77	.36	.53	.52	.50	.59	.58	.63	.55	.61	.49	.59	X				
16. Outdoor skills	.37	.42	.59	.32	.55	.46	.49	.52	.62	.59	.56	.54	.42	.54	.75	X			
17. Body care	.41	.59	.34	.54	.61	.55	.47	.51	.51	.48	.66	.52	.49	.69	.40	.46	X		
18. Tolerance	.57	.63	.43	.67	.72	.69	.74	.74	.79	.75	.75	.77	.48	.79	.54	.49	.65	X	
19. Safety	.48	.64	.42	.49	.68	.59	.63	.62	.65	.66	.63	.69	.48	.70	.52	.62	.55	.64	X

ted empirical clustering as distinct scales, we retained those separate identities to preserve the identity of the benefit themes rather than collapse the scales further into a smaller group that would have less intercorrelation.

Table 4 shows the overall means for the 19 perceived benefit scales as to their desirability, how much the respondents perceived they have changed along each benefit dimension, and the degree to which NOLS is credited as influencing any changes reported. Means for the three disposition scales are also shown. Because this is primarily a methods development paper, we did not attempt tests of differences between the means within a column in table 4.

Interpretations of table 4 must be tempered by the possibility that the means contain a low-response-rate bias. Those who responded might have been more motivated or reflect a more favorable disposition toward NOLS than those who did not. Any biases of these types should logically be more a problem for the Influence of NOLS variable than for the Desirability and Perceived Change variables, because these last two variables were not explicitly evaluated with respect to NOLS except for the Perceived Change since participation in the WRWC. In addition to the possibility of low-response-rate bias, some positive "halo effect" bias could be present, because many past participants of the WRWC are strong supporters of NOLS.

With the possibility of low-response-rate bias in mind, one can notice in table 4 that there is relatively little difference in how desirable each benefit was perceived to be on the average. This is not surprising given that each of the scales measure desirable or beneficial constructs. Note that most of the means approach 8.0, which on the response format used denotes *very desirable*.

Regarding Perceived Change, it is interesting to note that the mean de-

gree of change (since participation in the WRWC) was 3.0 or higher on 16 of the 19 scales, with 3.0 and 4.0 denoting *moderate* and *a lot of change*, respectively. Note too that the highest means are for those perceived benefits that either are explicitly grounded in NOLS objectives for the course or can logically be expected from the course. This pattern is even more pronounced for the highest mean scores in the last column, which reflect the degree to which the Perceived Changes can be attributed to the influence of NOLS—which we assume is mostly from the WRWC.

Concerning the Influence of NOLS variable, at least *a little* (score of 2.0) of the change reported was attributed to the WRWC for all 19 benefit scales, with 7 scales exceeding 3.0 (*moderate*) and one exceeding 4.0 (*a lot*). This relatively high attribution of the perceived beneficial changes to the WRWC is a particularly interesting finding—even if bias is present.

The means for the Disposition scales in table 4 reflect very positive overall attitudes toward the WRWC, when it is remembered that 7.0 reflects *agree strongly* or *disagree strongly* with the items (table 2) that

Table 4.—Overall means (and standard deviations) to perceived benefit and disposition scales (minimum usable N across all measures was 101).			
Perceived benefit scales	Desirability[a]	Perceived change[b]	Influence of NOLS[b]
1. Humility	7.4 (1.3)	2.5 (1.1)	2.2 (1.5)
2. Eating habits	7.7 (1.2)	3.1 (1.2)	2.4 (1.4)
3. Nonmaterial values	7.9 (1.1)	3.3 (1.2)	3.7 (1.4)
4. Trust others	7.3 (1.9)	2.4 (1.1)	2.2 (1.3)
5. Systematic and positive	7.9 (0.7)	3.1 (0.7)	2.8 (1.1)
6. Function responsibly	8.2 (0.6)	3.5 (0.7)	3.0 (1.0)
7. Open efficiency	8.0 (0.7)	3.1 (0.6)	2.5 (1.1)
8. Integrative	7.9 (0.8)	3.2 (0.8)	2.7 (1.3)
9. Leadership	7.9 (0.6)	3.2 (0.7)	2.9 (0.1)
10. Many balls in the air	8.0 (0.6)	3.4 (1.0)	3.0 (1.2)
11. Self-confidence	8.1 (0.6)	3.4 (0.8)	3.0 (1.0)
12. Understanding	8.0 (0.7)	3.1 (0.8)	2.5 (1.2)
13. Endurance	8.2 (0.7)	3.5 (1.1)	3.5 (1.4)
14. Can do	7.9 (0.6)	3.1 (0.8)	2.6 (1.1)
15. Nature understanding	8.1 (0.7)	3.6 (1.3)	3.7 (1.2)
16. Outdoor skills	7.8 (0.7)	3.7 (0.9)	4.1 (0.8)
17. Body care	7.5 (1.1)	2.4 (0.9)	2.3 (1.3)
18. Tolerance	7.9 (0.7)	3.0 (0.9)	2.5 (1.5)
19. Safety	7.7 (0.8)	3.2 (0.8)	2.9 (1.2)
Disposition scales[c]			
1. Enjoyment	6.2 (1.0)		
2. Break even	5.2 (1.9)		
3. General worth	6.7 (0.5)		

[a]The 9-point response format was coded 1 for extremely undesirable and 9 for extremely desirable, with 5 being undecided or neutral.

[b]The 6-point response formats were coded 0 for undecided, 1 for not at all, and 5 for very much.

[c]Means for the disposition scales were computed on a 7-point response format on which strongly agree was coded 7 and strongly disagree was coded 1 on positive items, with reverse coding of negative items, so a score of 7 reflects a positive disposition.

comprise the scales. Note the mean of 6.7 for disposition scale No. 3 and its small standard deviation.

Dispositions of Market Segments Toward the Course

The third objective of this methods-testing paper was to apply market-segmentation techniques to test whether different segments benefited differently.

After the three disposition scales were defined by cluster analysis, those scales were used to cluster or type the respondents. Table 5 shows that four disposition types were defined. The highly significant ($p = 0.001$) MANOVA supports the conclusion that different types were defined, as indicated by the differences in their means for the disposition scales.[4] The multiple comparison ANOVA's (using the LSD procedure) suggest which types differ. Thus, distinct market segments of participants were defined that varied in their dispositions toward the course and, as reported next, those types differed on the perceived benefit scales. Because it is possible to define the dominant social-economic characteristics of each disposition type, analyses of this form could be quite useful to organizations such as NOLS in

[4]*We reiterate that the statistical tests are used here to describe the relative strengths of the differences and not to test hypotheses.*

their marketing activities and in attempts to increase the attractiveness of the course to all participants.

To further test the effects of market segmentation techniques in research on the amenity benefits of wildlands, tables 6 and 7 show results of MANOVA and multiple comparison ANOVA tests of differences in means for the 19 perceived benefit scales by the Desirability, Perceived Change, and Influence of NOLS responses, by selected classes of socioeconomic variables. Since in research such as this, prevention of Type II error is just as important or more important than Type I error, an α of 0.20 was used for the MANOVA's and of 0.10 for the multiple comparison tests if the MANOVA suggested such. All attained p levels are reported for the MANOVA's even if they exceed the chosen α levels, both to point out some patterns that are not statistically significant and to document the significant levels of the negative findings—some of which came close to $\alpha \leq 0.20$. Those negative findings might be useful in future similar research designs.

Table 6 shows the results for the four Disposition types (labeled 1-4). The MANOVA's were significant for both the Desirability and Influence of NOLS tests, but not for Perceived Change. For Desirability of the benefits, the ANOVA's showed significant differences for 5 of the 19 perceived benefit scales, with the pattern being that disposition type 4 had

lower mean scores than the other three types. The last set of columns show too that type 4 scored lower than the other three types in 18 of the 19 scales when ratings were made of the Influence of NOLS on the beneficial changes reported. Although the MANOVA was not significant for the amount of Perceived Change reported, the same pattern holds there, with type 4 always registering the lower scores. No attempt was made to describe the characteristics of any of the types even though such analyses can be made to reveal useful marketing and program development information.

Table 7 also shows results for the four disposition types, but only for those perceived benefit scales that achieved statistical significance when the analysis involved subclasses of the socioeconomic variables. For example, the MANOVA for Sex was significant only for the Perceived Change response, but was close ($p = 0.22$) to the α of 0.20 for the Desirability response. In all cases, the females scored slightly higher than the males. The results for the Age-at-Time-of-the-Course variable shows that the MANOVA for Perceived Change was significant, with the older age group (20+ years) scoring lower than the two younger groups (13-15 and 18-20). Somewhat surprisingly, Year of Participation did not predict much difference in the perceived benefit scores. However, Education at the Time of the Survey did,

Table 5.—Means (and standard deviations) for the four disposition types by the three disposition scales.[a,b]

Disposition scales	Overall (n=100)	Disposition types 1(n=25)	2(n=45)	3(n=17)	4(n=13)	p[c]	Types that differ
A. Enjoyment	6.2 (1.0)	6.5 (0.6)	6.5 (0.7)	6.5 (0.5)	4.4 (1.2)	0.001	4≠1,2,3
B. Break even	5.2 (1.8)	4.5 (0.5)	6.7 (0.4)	1.9 (0.9)	5.3 (0.6)	0.001	3≠1,2,4; 1≠2,3; 2≠4
C. General worth	6.6 (0.5)	6.8 (0.2)	6.8 (0.3)	6.5 (0.6)	5.7 (0.6)	0.001	4≠1,2,3; 3≠1,2

[a]*Means for the disposition scales were computed on a 7-point response format on which strongly agree was coded 7, and strongly disagree was coded 1 on positive items, with reverse coding of negative items, so a score of 7 reflects a positive disposition.*

[b]*Attained p for the MANOVA was 0.001.*

[c]*This column reflects the attained p.*

Perceived benefit scale	Desirability Mean[a]				p	Types that differ	Perceived change Mean[b]				p	Types that differ	Influence of NOLS Mean[b]				p	Types that differ
	1	2	3	4			1	2	3	4			1	2	3	4		
1. Humility							2.6	2.8	2.7	2.0	0.06		2.4	2.4	2.6	1.5	0.02	4+1,2,3
2. Eating Habits							3.4	3.2	3.3	2.2	0.00	4+1,2,3	2.6	2.5	2.5	1.6	0.05	4+1,2,3
3. Nonmaterial values							3.7	3.4	3.3	2.5	0.03	4+1,2,3	4.0	3.8	3.6	2.7	0.00	4+1,2,3
4. Trust others													2.4	2.3	2.5	1.3	0.00	4+1,2,3
5. Systematic and positive	8.1	8.3	8.4	7.7	0.08	4+2,3	3.1	3.3	3.1	2.5	0.03	4+1,2,3	2.9	3.0	2.8	1.9	0.01	4+1,2,3
6. Function responsibly							3.6	3.6	3.4	2.9	0.03	4+1,2,3	3.3	3.1	3.0	2.1	0.01	4+1,2,3
7. Open efficiency							3.1	3.3	3.1	2.1	0.00	4+1,2,3	2.6	2.8	2.6	1.5	0.00	4+1,2,3
8. Integrative							3.4	3.6	3.3	2.4	0.00	4+1,2,3	2.8	2.9	3.0	1.9	0.02	4+1,2,3
9. Leadership							3.3	3.4	3.2	2.6	0.03	4+1,2,3	3.1	3.1	3.0	1.7	0.00	4+1,2,3
10. Many balls in air	8.1	8.1	8.2	7.4	0.02	4+1,2,3	3.6	3.6	3.5	2.6	0.01	4+1,2,3	3.3	3.1	3.1	1.9	0.00	4+1,2,3
11. Self-confidence							3.4	3.5	3.4	2.7	0.05	4+1,2,3	3.0	3.8	3.0	2.1	0.00	4+1,2,3
12. Understanding							3.4	3.2	3.2	2.2	0.00	4+1,2,3	2.9	2.7	2.5	1.6	0.00	4+1,2,3
13. Endurance							3.6	3.7	3.4	2.8	0.06	4+1,2,3	3.5	3.7	3.4	2.6	0.03	4+1,2,3
14. Can do							3.2	3.3	3.0	2.5	0.03	4+1,2,3	2.8	2.8	2.5	1.6	0.00	4+1,2,3
15. Nature understanding	8.2	8.1	8.3	7.6	0.09	4+1,2,3	3.8	3.6	3.7	2.9	0.09	4+1,2,3	4.1	3.9	3.5	2.7	0.00	4+1,2,3, 1+3
16. Outdoor skills							3.8	3.9	3.6	3.1	0.05	4+1,2,3	4.3	4.3	3.9	3.3	0.00	4+1,2,3, 3+1,2
17. Body care																		
18. Tolerance	7.9	7.9	8.3	7.6	0.09	3+1,24	3.3	3.2	3.0	2.2	0.01	4+1,2,3	2.7	2.7	2.7	1.5	0.01	4+1,2,3
19. Safety	7.7	7.9	7.9	7.0	0.02	4+1,2,3	3.3	3.4	3.1	2.4	0.01	4+1,2,3	3.2	3.1	2.9	2.0	0.00	4+1,2,3
MANOVA (attained p)				0.19						0.65						0.08		

[a] The 9-point response format was coded 1 for extremely undesirable and 9 for extremely desirable, with 5 being undecided or neutral.
[b] The 5-point response formats were coded 0 for undecided, 1 for not at all, and 5 for very much.

with less education accompanied by higher scores on the significant Desirability, Perceived Change, and Influence of NOLS responses.

It is obvious that different types of respondents did appraise the perceived benefits somewhat differently, but the magnitude of the differences in the statistically significant means is usually not great, except for some of the differences by disposition type.

Conclusions and Recommendations

We can conclude from the results of this exploratory study that the respondents were quite able to identify and articulate a wide variety of perceived benefits, which were perceived as highly desirable, although highly correlated. They also reported many beneficial changes that they felt they had realized since participating in the WRWC. Furthermore, they attributed relatively high proportions of those changes to that course—a particularly interesting finding. Interesting too was the emergence of benefit themes that logically relate to the WRWC but that have not yet been articulated by NOLS as possible benefits.

It was also shown that it was possible to measure affective disposition toward the course with the multiple-item inventory, which was quite restricted in this exploratory study. Specifically, the respondents differed in their dispositions toward the course, and this caused differential responses to the perceived benefit scales. A larger inventory of disposition items in future studies might disclose greater variability. Finally, other differences by socioeconomic characteristics existed to differentiate the respondents by their perception of the desirability of the benefits, how much they perceived they had realized those benefits, and the degree to which they attributed that change to NOLS. Still, the magnitudes of those statistically significant

Table 7.—Results of MANOVA and multiple comparison ANOVA tests of mean differences on the 19 perceived benefit scales by selected characteristics of the respondents. Means, attained p's, and characteristics that differed are shown for differences with an attained $p \leqslant 0.10$.

Sex (Male = 49, Female = 45)

Perceived benefit scale	Desirability			Perceived change			Influence of NOLS		
	Mean[a]		Attained	Mean[b]		Attained	Mean[b]		Attained
	Male	Female	p	Male	Female	p	Male	Female	p
1. Humility	7.2	7.6	0.04						
5. Systematic and positive	7.7	8.1	0.04						
6. Function responsibly				3.3	3.6	0.06			
7. Open efficiency	7.8	8.2	0.06						
8. Integrative				3.0	3.4	0.10			
11. Self-confidence	7.9	8.2	0.01	3.2	3.5	0.04			
13. Endurance	8.0	8.3	0.09						
14. Can do				3.0	3.3	0.09			
17. Body care	7.3	7.8	0.04						
MANOVA (attained p)	0.22			0.02			0.46		

Perceived benefit scale	Desirability					Perceived change					Influence of NOLS				
	Mean[a]				Differ-	Mean[b]				Differ-	Mean[b]				Differ-
	1	2	3	p	ences	1	2	3	p	ences	1	2	3	p	ences

Age at time of course (1=15-17, 2=18-20, 3=+20, with n=39, 29, and 27, respectively)

Perceived benefit scale	1	2	3	p	Differ-ences	1	2	3	p	Differ-ences	1	2	3	p	Differ-ences
1. Humility						2.8	2.8	2.2	0.01	3+1,2	2.5	2.4	2.0	0.10	3+1,2
2. Eating habits	7.6	8.0	7.4	0.09	2+3										
4. Trust others						2.7	2.8	2.1	0.01	3+1,2					
5. Systematic and positive						3.1	3.4	2.8	0.06	2+3					
7. Open efficiency						3.1	3.2	2.8	0.06	3+1,2					
12. Understanding	8.0	8.2	7.7	0.07	2+3										
19. Safety						3.1	3.2	2.8	0.06	3+1,2					
MANOVA (attained p)	0.30					0.08					0.61				

Year of participation (1=1974, 2=1975-81, 3=1982 and 84, with n=25, 34, and 35 respectively)

Perceived benefit scale	1	2	3	p	Differ-ences	1	2	3	p	Differ-ences	1	2	3	p	Differ-ences
2. Eating habits	7.9	7.3	7.6	0.06	2+1,3	2.5	2.1	2.7	0.09	2+3					
12. Understanding	7.8	7.8	8.2	0.07	3+1,2										
MANOVA (attained p)	0.20					0.23					0.27				

Education at time of survey (1=13-15, 2=16, 3=+16 with n=2, 38, 37 respectively)[c]

Perceived benefit scale	1	2	3	p	Differ-ences	1	2	3	p	Differ-ences	1	2	3	p	Differ-ences
1. Humility						3.0	2.8	2.3	0.02	3+1,2					
2. Eating habits						3.2	3.4	2.8	0.05	2+3	2.9	2.5	2.1	0.06	1+3
3. Nonmaterial values											4.2	3.6	3.5	0.05	1+2,3
10. Many balls in air	8.3	8.1	7.8	0.05	3+1,2						3.5	2.9	2.9	0.06	1+2,3
15. Nature understanding	8.4	8.2	7.8	0.01	3+1,2	4.0	3.7	3.2	0.04	3+1,2					
16. Outdoor skills	8.1	7.9	7.6	0.09	1+2										
MANOVA (attained p)	0.18					0.16					0.09				

[a]The 9-point response format was coded 1 for extremely undesirable and 9 for extremely desirable, with 5 being undecided or neutral.

[b]The 6-point response formats were coded 0 for undecided, 1 for not at all and 5 for very much.

[c]Education codes were 9-12 = secondary; 13-16 = undergraduate (college); and 17-22 = graduate (college).

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differences were not large.

The methods tested provide a novel way of eliciting perceived benefits, evaluating the Desirability of those benefits; measuring Perceived Changes along each dimension of benefit over a specified time period; and estimating how much of any such change is attributed to a causative agent such as participation in the WRWC. The results also indicate that there can be useful applications of market-segmentation methods to research on the benefits of the recreational uses of wildlands.

Although low response rates deter generalizations of the findings to all past participants in WRWC's, the results of this exploratory study suggest that the results of future similar studies might be used in the following ways:

1. Contrast the likely benefits of NOLS-type courses with those attainable from other structured and unstructured outdoor programs.

2. Help organizations such as NOLS evaluate the effectiveness of their courses; define the objectives of specific courses better; improve their marketing strategies; define which types of participants benefit the most; identify types of participants who are most and least favorably disposed toward their courses; and, by addition of variables that describe different components of a course, identify those that contribute the most to participant types of benefits.

3. Contribute to the body of knowledge about the benefits of outdoor programs and activities, a topic on which very little systematic research has been conducted.

Future studies should include participants in different types of courses at different locations; a wider inventory of disposition items; and variables that define different aspects and components of the course, including descriptive information on the instructors. They also should be designed to achieve an appropriate response rate through use of followup questionnaires and other means.

Literature Cited

Barcus, Carolyn G.; Bergenson, Roland G. 1982. Survival training and mental health: a review. Therapeutic Recreation Journal. 6(1): 3-7.

Burton, Leslie M. 1981. A critical analysis and review of the research on Outward Bound and related programs. New Brunswick, NJ: Rutgers University. 196 p. Ph.D. dissertation.

Driver, B. L. 1987. Benefits of river and trail recreation: the limited state of knowledge and why it is limited. In: Seguire, Susan, ed. Proceedings, International congress on trail and river recreation. Vancouver, B.C.: Outdoor Recreation Council of British Columbia: 44-58.

Driver, B. L.; Burch, William R., Jr. In press. A framework for more comprehensive valuations of public amenity goods and services. In: Peterson, George L.; Driver, B. L.; Gregory, Robin, eds. Amenity resource valuation: integrating economics with other disciplines. State College, PA: Venture Publishing, Inc.

Driver, B. L.; Nash, Roderick; Haas, Glenn E. 1987. Wilderness benefits: a state-of-knowledge review. In: Lucas, Robert C., comp. Proceedings, National wilderness research conference: issues, state-of-knowledge, future directions. Gen. Tech. Rep. INT-220. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station: 294-319.

Easley, A. T.; Roggenbuck, J. W.; Ratz, J. 1986. Wilderness education at NOLS: student outcomes and correlates of perceived instructor effectiveness. In: Lucas, Robert C., comp. Proceedings, National wilderness research conference: current research. Gen. Tech. Rep. INT-212. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station: 377-384.

Ewert, Alan. 1983. Outdoor adventure and self-concept: a research analysis. Eugene, OR: University of Oregon, College of Human Development and Performance. 35 p.

Ewert, Alan. 1986. Values, benefit and consequences of participation in outdoor adventure recreation. In: A literature review: the President's Commission on Americans Outdoors. Washington, DC: Government Printing Office: 71-80 (of Values section).

Gibson, Peter M. 1979. Wilderness as sacred place. Washington, DC: Association of American Geographers. 227 p.

Henry, W. R.; Driver, B. L. 1974. Participants' reasons for attending the national outdoor leadership school's 1972 wilderness expedition courses. Journal of Outdoor Education. 9(1): 6-13.

Levitt, Lynn. 1982. How effective is wilderness therapy? a critical review. In: Boteler, Franklin E., comp. Proceedings, Third annual conference wilderness psychology group; 1982 July 8-9; Morgantown, WV. Morgantown, WV: West Virginia University, Division of Forestry: 81-93.

Peterson, George L.; Driver, B. L.; Brown, Perry J. [In press] The benefits of recreation: dollars and sense. In: Johnson, Rebecca L.; Johnson, Gary V., eds. Economic valuation of natural resources: issues, theory and applications. Boulder, CO: Westview Press.

U. S. National Park Service. 1981. A national agenda for recreation re-

search. Washington, DC: Recreation Resource Development Division, NPS. 26 p.

Williams, Daniel R.; Ellis, Gary D.; Nickerson, Norma; Shafer, C. Scott. In press. Contribution of time, format and subject to variations in recreation experience preference measurement. Journal of Leisure Research.

Collective Social Groups in the Wilderness: Problems and Prospects

John L. Heywood[1]

Abstract.—Collectives are made up of combinations of known and unknown others, who join together to pursue a one-time wilderness activity, then disband never to exist again. Collectives are of interest because not only must they develop a structure and processes to pursue individual and collective goals, but often they must also cope with challenging, hazardous environments while doing so. Parson's Theory of Social Action systems is used to develop an approach to understanding collective development in wilderness settings.

Within a wilderness setting a variety of different combinations of people may be observed participating in activities as leisure social groups. For river settings, Heywood (1984) has developed a typology of recreation groups based on the group's composition and social history. Recreation groups may be made up exclusively of all known or all unknown others, or may be a combination of known and unknown others.

Two basic types of groups are recognized as primary and collective. Primary groups are at the "all known" end of the composition continuum and are made up of family and friends. These groups have a past and will have a future social history of reciprocal relationships. Collective groups are made up of various combinations of known and unknown others.

At the "all unknown" end of the continuum, collective groups are made up entirely of strangers. These groups have no past social history and will disband when the recreation activity ends.

Collective groups in the middle of the continuum are composed of combinations of families, friends, and strangers. While the family and friendship subgroups have different and separate social histories, the collective group has no past social history and will disband when the activity ends.

Problem Statement

Most research has been done on groups where members are friends or intimates, and the recreation experience is part of the group's ongoing social history (Burch 1969, Cheek and Burch 1976, Field and O'Leary 1973). In many situations, such as whitewater river-running, mountaineering, and trekking, group effort is necessary to accomplish the recreational goals associated with these activities. More and more of these types of activities are being commercialized, and a wider array of individuals are participating who have different goals, skills, and interests.

A distinguishing characteristic of many commercial groups is their collective make up, that is they exist only to pursue an activity for one time. Heywood (1984) has shown that 81% of the respondents in a national study of river users indicated that they took their river trip in a group composed of some or all unknown others. The problem of interest is that these groups must either have very good leadership, or they must establish systems of action that integrate members and develop the means to accomplish the activity being pursued. The purpose of this paper is to present a theoretical perspective on collective group development.

Collective Groups—A Theoretical Perspective

Individuals participating in an activity are viewed as goal-directed actors (Driver and Tocher 1974). The collective, then, may either function as a goal-directed unit that enhances the goal achievements of its members, or may rely on the skills and resources of an outside leader. Hare (1976) has recognized five characteristics which describe how a collective assortment of individuals develops into a group. The first condition is that there must be some interaction among the collection of individuals to be considered a group. For our purposes, interaction must be personal and be sustained for longer than 1 day. Thus, collectives of recreationists on nature walks or historical tours of short duration are not of interest. For the "longer" duration collectives, it is inconceivable that some development would not take place, even when there is strong reliance on the leader. Hare's other four characteristics are (Hare 1976:5):

- The members share one or more *motive* or *goal* which determines the direction in which the group will move.

- The members develop a set of *norms*, which set the

[1] School of Natural Resources, Ohio State University, Columbus, OH.

boundaries within which interpersonal relations may be established and activity carried on.

- If interaction continues, a set of *roles* becomes stabilized and the new group becomes differentiated from other groups.

- A *network of interpersonal attraction* develops on the basis of the "likes" and "dislikes" of members for one another.

To begin to consider how collectives develop norms, establish roles, and develop patterns of interpersonal relations, we will use Parsons' theoretical perspective (Parsons 1960, Parsons et al. 1953, Parsons and Shils 1951). While Parsons' theory is usually described as a structural/functionalist model, three recent critiques (Adriaansens 1980, Bourricaud 1981, Hamilton 1983) have shown that Parsons' thought evolved away from functionalism to embrace an "interchange-paradigm" (Adriaansens 1980:111).

The interaction-paradigm is derived by cross-classifying two major continua of problems (fig. 1) that goal-directed action systems must confront (Effrat 1961). First, the action system must consider the boundary reference; meaning, is the problem primarily *internal* or is it primarily *external*? Internal problems are concerned with the interactions

among actors. For example, are status and role based on universal qualities like age or sex, or on particular qualities such as being the father or leader?

External problems are concerned with how the action system interacts with the outside environment or other action systems. For example, how can the skills of members be adapted to the demands of the activity and the setting so that progress can be made towards achieving a goal (e.g., climbing a mountain when there is competition with other climbing parties).

Second, the action system must consider the structures and processes of action; that is, are they primarily oriented to *instrumental* activities or problems concerning the means that must be acquired and incorporated into the action system (e.g., technologies and equipment that are available or required) or are they oriented towards *consummatory* activities directed to achieving ends (e.g., using and applying technologies and equipment)?

The four analytical aspects of the action system are: A—*Adaptation*, G—*Goal-attainment*, I—*Integration*, and L—*Latency* (pattern-maintenance and tension-management). Adaptation concerns how the action system manipulates aspects of the *external* environment or reacts to other action systems to generate skills and resources (*instrumental*) for internal use and distribution. The problem of adaptation recognizes that action systems do not exist in isolation from the outside environment or other systems. Leisure collectives then must develop means of coming to terms with the recreation setting and other leisure collectives or groups. Needs or goals are those desirable attributes *external* to the action system which motivate members to expend effort and energy while utilizing their skills and resources (*consummatory*). Goal-attainment is most effective when members of collectives accept and conform to mecha-

nisms of control which enhance the effectiveness of resource utilization in the pursuit of common goals. Integration refers to the *internal* rules and processes which *consume* time and effort in coordinating activities and developing a sense of solidarity and belonging. All action systems exist in a cultural milieu (*latency*) which defines general system patterns (*instrumental*) which each member expresses individually (*internal*). This results in two interlocking problems: pattern-maintenance, which refers to the cultural symbols, ideas, tastes, and judgments that form the code of action; and tension-management, which refers to the resolution of internal strains and tension that results from individual differences in the values associated with the code.

The AGIL scheme can be used to describe the stages a collective passes through if full development occurs. Hare (1982) describes a typical sequence as L-A-I-G followed by a terminal L! phase. The initial problems collectives must solve are to establish an identity or purpose (L), and acquire skills and behaviors (A) necessary to pursue the activity. As skills are acquired, reorganization takes place as the collective becomes less dependent on the leader (I), and the skills are applied to achieve individual and collective goals (G). When the activity ends and the collective group disbands, a terminal L! phase occurs during which the relationships between the members are redefined. The length and/or completion of each phase is determined by the direction or lack of direction given by the leader and the skills and emotional stability of the members. The process evolves or cycles in such a way that members can reconstitute relationships if changes occur or solve problems in the different interaction areas (fig. 2). The potential for failure or conflict can be seen in each stage of development. For example, if equipment breaks or is inoperative (A), the collective may cycle back to establish a different purpose or iden-

Boundary reference	Instrumental	Consummatory
External	(A) Adaptation	(G) Goal attainment
Internal	(L) Latency	(I) Integration

Figure 1.—Parsons' interaction paradigm.

tity (L) before moving on to a different set of individual and group goals. Hare (1982) shows how the major phases can cycle through the same sequence of subphases. For example, the selection of members for a demanding expedition represents an L-phase component (Hare 1982). The subphases include the idea of member selection (L_l), which may require special equipment and supplies (L_a) (e.g., tests and technical gear), and the creation of special role relationships (L_i) to conduct the actual selection (L_g).

Leisure Collective Development

In situations where collectives may be prevalent, such as river recreation, a theoretical perspective on collective development is needed to guide research and provide a basis for understanding the problems these action systems face and the processes used to solve them. The next section of this paper will present a qualitative analysis of collective development following the L-A-I-G sequence given by Hare (1982).

Latency

The latency problems a collective group faces in the process of development are internal and instrumental. The potential members must assess the composition of the group and begin to determine what resources will be needed to accomplish the individual and collective goals. In commercially organized and provided situations, the instrumental needs are provided by the guide or outfitter. In noncommercial situations, some other source of equipment and supplies must be available.

During this stage, the group attempts to establish an identity and recognize common values. In nature challenge/adventure pursuits, guides, outfitters and livery operators provide an initial basis for devel-

oping a collective identity through company names, logos, and slogans. In the field, trip leaders, boatmen, and wranglers are usually responsible for pretrip presentations that establish important values for safety, sanitation, and "wilderness" ethics. The implications of the identity/value process are twofold: (1) in public sector, wildland management managers need to recognize that the

resource or agency is not likely to provide the symbols or the messages that are the bases for initial collective identity and value formation; and (2) while private operators are cognizant of the need to establish market identity for their product, we can see how this can also provide a focus for initial collective identity.

Categorizing the other unknown members is important so that a sense
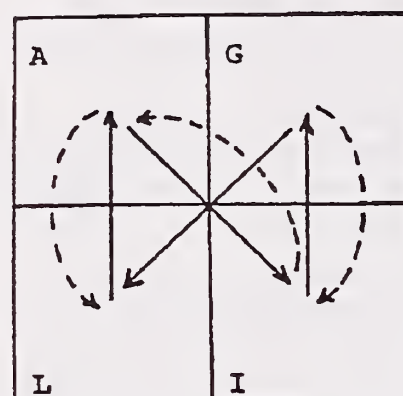
L-A-I-G L! Sequence showing effects of changes
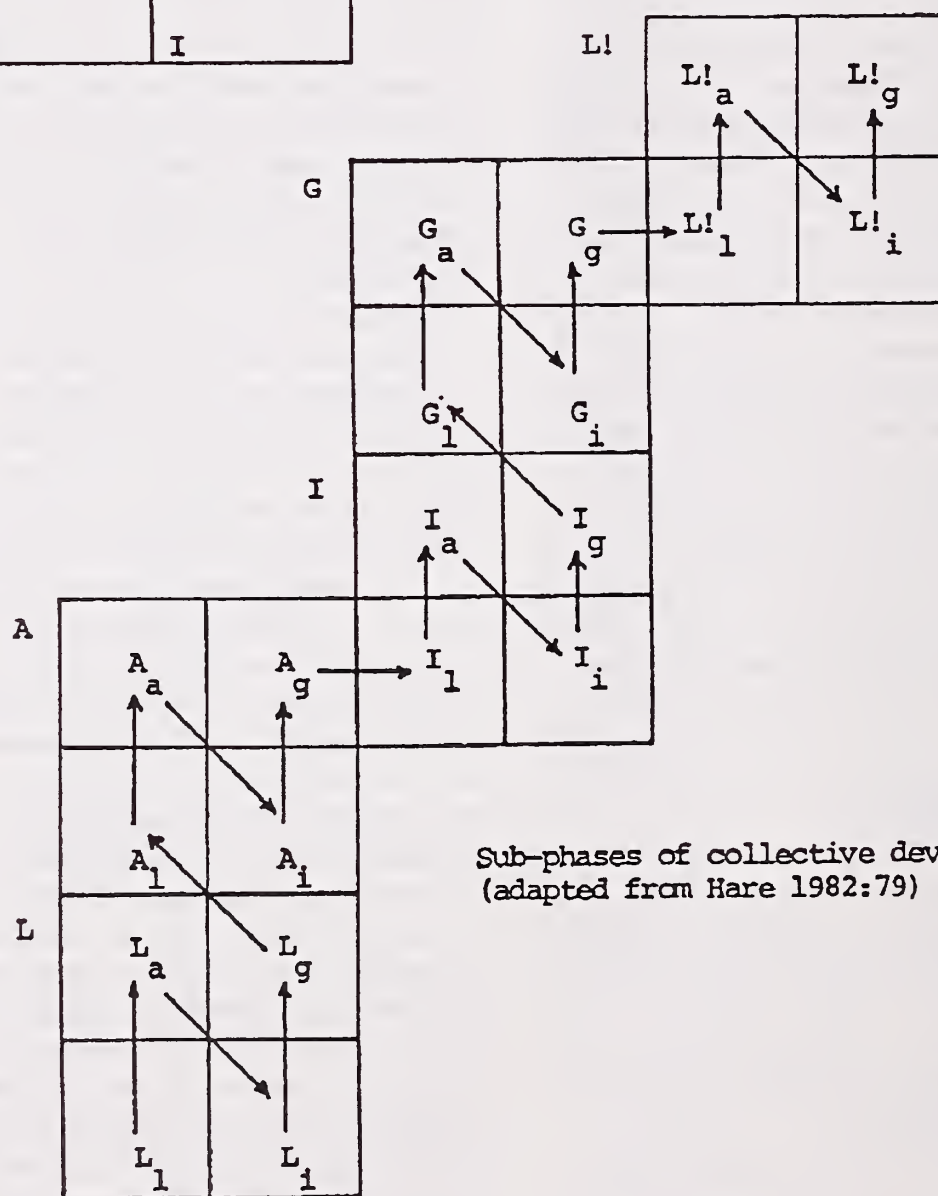
Sub-phases of collective development (adapted from Hare 1982:79)

Figure 2.—Models of collective development.

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of the range of values and skills available in the collective can be established. Because of the lack of experience in working and dealing with one another, the abilities of others are difficult to estimate. The concept of "taste" (Cheek and Burch 1976) can be used to analyze situations where social bonds do not exist among interacting social persons. Taste, in the initial formation of collectives, is governed by cultural patterns. Therefore, assessment of others is based on apparent qualities with cultural value such as age, sex, and dress. The norms governing social persons in these situations are related to legitimacy and efficiency. Tastes which have strong cultural analogs will have greater legitimacy and problems of interpersonal relations should be solved more efficiently. In those situations where certainties of taste are absent, transitional codes regulate interaction among members of collectives. These are norms grounded in myth which when legitimized by others become traditions. The carriers of myth and tradition would seem to be those more experienced in the activity (Bryan 1979), or the outfitter or guide in commercial recreation situations.

Adaptation

As the latency problems are solved, members can begin to solve external and instrumental problems concerning what is needed to achieve individual and collective goals. The collective begins working together so that skills and behaviors are acquired relative to the resources needed, and to the recreation activity and setting. Formality governs how members respond to one another, but enough is known about individual's skills for members to recognize and respond to the abilities of different actors. Recreation skills and behaviors can range from those that are highly technical (e.g., rock-climbing, glacier traverses, whitewater-rafting) to

those that are related to values and ethical systems (e.g., low-impact camping). While the trip leader is recognized because of his specific class, others with skills and experience may be emerging during this phase whose significance to individual and collective goal achievement results in specific classifications (e.g., cook, entertainer, nature specialist).

The skill levels likely to be found in collectives have a high probability of considerable variation. For example, for whitewater-rafting Schreyer et al. (1984) found commercially outfitted trips to attract larger proportions of participants who had little or no previous experience in this activity. However, others with considerably more experience, particularly those Schreyer et al. defined as collectors, were also found to use commercial outfitters. If experience is an accurate indicator of skill level, and if participation in any specific collective is essentially random, we should expect to find many outfitted, whitewater raft parties made up of members who have a variety of different skill levels. Thus, the central problem during this stage in collective development is for those with no or low skills to acquire some, and for those with skills to adapt them to the needs of the collective.

Integration

Integration represents the transition from solving the instrumental problems of latency and adaptation to solving consummatory problems, or how best to utilize the resources and skills available. The focus of this phase is internal and concerns the development of interpersonal relations, defined by internal norms and roles, which build a collective identity. That is, members have now categorized one another based on their ascribed normative status and role(s) within the group. Status and role will have been acquired or assigned primarily during the adaptation phase.

During the integration stage, identity shifts from the generic (company names, logos, slogans) to the specific characteristics of the particular collective. That is, members have begun to recognize the uniqueness of the situation and the relationships that have developed to optimize collective goal attainment. Thus, reorganization may occur as the collective begins to realize its potential and becomes less dependent on the nominal leader. This will require coordination and efforts to control the potential development of conflict. The more differentiated the make up of the collective the more complex solutions to these problems become.

Evidence that collectives successfully resolve the internal, consummatory problems of integration can be found in studies of river recreation. Heywood (1975) found consistently high cohesiveness in Grand Canyon Colorado River float-trip parties. Cohesiveness was defined as the attractiveness of the river party to its members as a group. High cohesiveness is synonymous then with full integration of members in the group. The only situations where cohesiveness was lower were for some small parties and for the largest parties. Data from the National River Recreation Study (Lime 1983) provides further support for the integration of collectives but from a different perspective. In a question about problems experienced during the river trip, one item asked respondents about conflicts or tensions within their party. Of the respondents who took their trip in a party with some or all unknown others, 89% did not perceive conflicts or tensions within their party to be a problem. Thus, we found evidence for collective integration from both a positive perspective (i.e., cohesiveness) and from a negative perspective (i.e., internal party conflict and tension).

An additional integrative process appears to be the collective facing of a challenge. Stone and Taves (1958) introduced the idea that the solidar-

ity of wilderness camping parties was fostered by the recognition of the struggle with nature. An important part of their argument was that the condition was only operative when the challenge was from without. Nature then was viewed as an adversary that the party had to struggle with to overcome.

Goal Attainment

An integrated, functioning collective is able to apply its skills and resources to achieve individual and collective goals. This final stage in collective development focuses on solving external and consummatory problems. In recreation situations, environmental obstacles and hazards or other competing groups or collectives may constrain goal achievement. The collective must successfully overcome these external problems by using the skills and resources at its disposal. The contests for problem solving have developed through the previous stages which defined collective norms and roles. These structural and normative characteristics can provide an efficient and effective way for each collective to achieve its recreational goals.

Discussion

Development of a theoretical perspective on collective development provides an analytical tool which can serve either of two purposes (Turner and Maryanski 1979): (1) for comparative analyses to identify universal problems and the diverse ways people go about dealing with them; or (2) for holistic analyses to allow us to sort out important from unimportant processes and structures.

In a comparative analysis of collective development, we can ask what happens when interaction problems are only partially solved or not solved at all. We can imagine three scenarios that characterize such situations: (1) the collective completes the activity but has never become fully integrated; (2) some members leave the collective before the activity is completed; or (3) the collective does not complete the activity. In the first instance, all resources are available to the collective, but it never develops a coherent structure or set of norms. For example, the river is successfully run, but the collective contributes little to the successful completion of the activity. The most important resource in these situations would be the leader (e.g., an outfitter, guide, or boatman). If the leader is strong and resourceful enough, do we need concern ourselves with the issue of collective development? This depends on the leader and the variety of roles he/she attempts to play. Hare (1982: 137) illustrates some of the problems of role conflict that develop when the leader attempts to do all things for the collective. For example, the role of "family head" (integration) requires closeness with collective members, while the role of "expedition founder" (pattern maintenance) (e.g., river outfitter) requires distance from collective members. Thus, the leader would do better to foster the development of the collective in order to reduce the difficulties for himself of being solely responsible for completing the activity.

If resources are inadequate or are being inefficiently utilized, and/or the collective has not become integrated, members may decide to abandon the collective and forgo achieving the recreational goal. In this case, either external or internal problems may operate independently or in combination to force partial or complete dissolution of the collective. External problems may be due to severe weather conditions, faulty or inadequate equipment, unanticipated hazards, or other natural or technical conditions. Internal problems can result from conflicts over roles, structures, and norms. As an extreme example, in the novel "Requiem for a River Rat" (Ekker 1986),

a serious accident resulting in a death occurs in Crystal Rapid on a fictional raft trip on the Colorado River through Grand Canyon. A relative to the accident victim leaves the trip before the collective continues on. This external event changes the collective composition and structure causing internal problems of pattern maintenance, which forces the collective to adapt to a different social system and to struggle with problems of integration for several days of the trip. In a "real-life" situation such an extreme occurrence might result in the collective abandoning the activity altogether.

A holistic analysis of collective development would focus on delineating those interaction problems that are most critical for collectives. Because collectives lack any previous social history, we propose that the interaction problems of latency and integration are the most critical. Solving these internally-oriented problems is necessary for collectives to establish processes and relations that integrate their members and establish a collective identity. Thus, while the collective exists to pursue an activity (e.g., to run a river, climb a mountain, or trek through a wilderness), internal processes and structures can enhance the collective ability to optimize the potential for meeting individual and collective goals.

Conclusion

The development of a theoretical basis for understanding collectives suggests several research questions. First is how prevalent are collectives and are they more characteristic of certain recreation activities than others? A methodological problem that must be solved, to answer this first question, is in developing valid and reliable measures of group composition (Heywood 1984). A second question relates to how you operationalize the different elements in the AGIL scheme in an applied research

situation. Hare (1976: 14) suggests operational definitions for the AGIL elements, but these would need considerable work to adapt them to recreation activity groups.

A final comment is needed to address the issue of how useful understanding collectives and their development is to wilderness managers and entrepreneurs. First, the presence of collectives may be a characteristic of only certain wilderness activities and settings. For example, river recreation appears to be one activity where collectives predominate. Managers of wilderness resources utilized by collectives could gain a better understanding of how the dynamics of these groups affects the members' recreation experiences. While managers may be doing a good job of providing appropriate resource settings and opportunities for the activity, they probably have little or no control over group formation and development. They should understand that these important elements of the wilderness activity are largely outside their realm of influence or control.

Second, there appears to be a growing interest and involvement in challenge and risk activities that have fostered private, profit, and non-profit service enterprises specializing in guided and outfitted expeditions and trips. Owners and leaders could benefit by understanding the dynamics of how collectives develop structures and resources to optimize goal attainment irrespective of company or leader efforts. Lastly, understanding the role of the leader in the collective development process can increase the effectiveness of the group in dealing with external threats and hazards.

Literature Cited

Adriaansens, H. P. M. 1980. Talcott Parsons and the conceptual dilemma. Boston, MA: Routledge & Kegan Paul.

Bourricaud, F. 1981. The sociology of Talcott Parsons. Chicago, IL: University of Chicago Press.

Bryan, H. 1979. Conflict in the great outdoors: toward understanding and managing for diverse sportsmen preferences. Sociological Studies No. 4. Bureau of Public Administration, University of Alabama.

Burch, W. R., Jr. 1969. The social circles of leisure: competing explanations. Journal of Leisure Research. 1: 125-147.

Cheek, N. H., Jr.; Burch, W. R., Jr. 1976. The social organization of leisure in human society. New York, NY: Harper & Row.

Driver, B. L.; Tocher, S. R. 1974. Toward a behavioral interpretation of recreational engagements, with implications for planning. In: Driver, B. L., ed. Elements of outdoor recreation planning. Ann Arbor, MI: University of Michigan Press.

Effrat, A. 1961. Editor's introduction. Sociological Inquiry. 38: 97-104.

Ekker, N. 1986. Requiem for a river rat. New York, NY: Dembner Books.

Field, D. R.; O'Leary, J. T. 1973. Social groups as a basis for assessing involvement in selected water activities. Journal of Leisure Research. 5: 16-25.

Hamilton, P. 1983. Talcott Parsons. London: Tavistock Pub.

Hare, A. P. 1976. Handbook of small groups research, 2nd edition. New York, NY: The Free Press.

Hare, A. P. 1982. Creativity in small groups. Beverly Hills, CA: Sage Publications.

Heywood, J. L. 1975. Group cohesiveness and satisfaction on Grand Canyon Colorado River raft trips. Tucson, AZ: University of Arizona. Unpublished Ph.D. dissertation.

Heywood, J. L. 1984. Toward a river recreation group typology. Proceedings, 1984 national river recreation symposium. Baton Rouge, LA: Louisiana State University.

Lime, D. W. 1983. Personal communication. National River Recreation Study. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station.

Parsons, T. 1960. Pattern variables revisited: a response to Robert Dubin. American Sociological Review. 25: 467-483.

Parsons, T.; Bales, R. F.; Shils, E. A. 1953. Working papers in the theory of action. Glencoe, IL: The Free Press.

Parsons, T.; Shils, E. A. 1951. Toward a general theory of action. New York, NY: Harper & Row.

Schreyer, R.; Lime, D. W.; Williams, D. R. 1984. Characterizing the influence of past experience on recreation behavior. Journal of Leisure Research. 16: 34-50.

Stone, G. P.; Taves, M. J. 1958. Camping in the wilderness. In: Larrabee, E.; Meyersohn, R., eds. Mass Leisure. Glencoe, IL: The Free Press.

Turner, J. H.; Maryanski, A. 1979. Functionalism. Menlo Park, CA: Benjamin/Cummings Pub. Co.

Observations of the Effects of Human Social Behavior in Varied Wilderness Settings

Gary C. Wakefield and Rudi Rudibaugh[1]

Abstract.—It is the intent of this paper to report on some of the complex social behavior patterns that can evolve in a wilderness setting. It was recognized early that task assignments were critical in assuring group members treated each other with respect. It was also noted that the size of the groups had a direct bearing upon their social structure. Large groups tended to break into "cliques" which competed with each other for status. The tension between members of the cliques escalated with time. There is evidence to suggest the high levels of tension created were transmitted to saddle and pack stock. Positive social impacts were observed on group members with low self-esteem.

The basis for this paper was a series of wilderness horseback pack trips sponsored by Slippery Rock University of Pennsylvania, which took place during July and August over a 5-year period. The concept of these programs was to develop in the participants an appreciation for wilderness through the process of adventure education. "Adventure education is merely an extension of a long tradition of ancillary activities... which provide a sense of physical challenge and perceived risk to influence the total development of the individual" (Mand 1985).

The wilderness trips took place in the West Elk Wilderness on the Gunnison National Forest and the La Garita Wilderness on the Rio Grande National Forest, Colorado. During these expeditions, we observed behavior modification apparently brought about by the wilderness setting. Petrus et al. (1977) states, "In an intensive wilderness setting...structure can be changed, roles become ambiguous, stress and anxiety come about more spontaneously, new normative systems need to be established...This situation begets anxiety because of the uncertainty of status and roles, and enhances the possibility of conformity within the group." Participants found themselves in an intensive wilderness setting for 7 days, which is longer than the norm. Stankey (1980) reported that 92% of visitors to the Desolation Wilderness stayed 5 days or less. Lucas (1985) also reported that the horseback visitor in the Bob Marshall Wilderness stayed an average of 6.3 days.

This anxious atmosphere was further complicated by the coeducational nature of the groups. Whereas, Lucas (1985) reported that only 30% of the visitors to the Bob Marshall Wilderness were females. Women made up 48% of the groups we led into the West Elk and La Garita wilderness areas. Zeamer (1975) states, "A coeducational expedition is more likely to provide a situation in which students are encouraged to develop responsible attitudes and internal controls governing their behavior...it is expected that a coeducational program provides an opportunity for students to develop respect for one another's privacy."

The average size of the expeditions led was 16, which again exceeds the average party size of 4.7 in the Bob Marshall Wilderness, as reported by Lucas (1985). Only 24% of the parties visiting the Spanish Peaks Wilderness and 30% of those visiting the Desolation Wilderness exceeded 11 people (Stankey 1980).

Procedures

Members of each expedition received instruction on low-impact camping procedures, horsemanship, and expedition behavior. The low-impact procedures were rigidly enforced and very successful despite the potential for significant impact by 16 people accompanied by an average of 21 head of trail stock.

Over half of those participating were classified as novices in their horsemanship skills. The trips were designed to provide the easiest riding early in the journey with the more difficult terrain being traversed after the riders had become familiar with their mounts and polished their riding skills. Each student was responsible for his horse and tack.

Each expedition was divided into four "task groups." These groups had rotating responsibility for cooking, clean-up and latrine, firewood, and assisting with the pack stock. We found it beneficial to rotate these functions during the trips in order to enhance the learning experience and reduce the possibility of friction as one group might feel that it had a harder task than another group.

Generally, an average of 70 miles was covered during the 7-day expeditions. Only one site was used for 2 nights. This not only reduced impact, but provided a variety of scenic experiences each day.

[1]Wakefield is with the Parks and Recreation/Environmental Education Department, Slippery Rocky University of Pennsylvania, and Rudibaugh is with the Fossil Ridge Guide Service, Parlin, CO.

Observations

Both positive and negative social behavior was observed on the expeditions. The smaller groups were more homogeneous and derived a higher level of satisfaction from their wilderness experience. However, any factor which differentiated between members of the expedition often served as a source of conflict. In the early trips, members were permitted to choose a credit-earning opportunity. Those doing so were assigned extra duties which became a source of friction as they felt they were subservient to the noncredit participants. Later, expeditions permitted only credit-earning students to participate.

Experienced members of the groups often assisted in the learning experience by helping others with less experience. Most inexperienced participants welcomed this assistance. Occasionally, a student might resist the intrusion of his/her privacy, and become uncooperative. This behavior was more prevalent with married couples than with singles. Once, a woman refused the assistance of her husband in saddling her horse. Several hours later she was embarrassed when the saddle slid off over the horse's neck.

Cooperation was also necessary in discharging task group responsibilities. Sometimes a member of a task group might not do his/her share of work. Often this occurred because the member in question was not skilled in a particular task, such as cooking. If the student did not make an effort to help or learn, the task group resented his/her non-\involvement. If this behavior was repeated by the member, the expedition group as a whole would begin to reject him or her. This coincides with behavior reported by Petrus et al. (1977) who states, "If a group member does not conform and is labeled a deviant, a tremendous amount of conflict can ensue..."

Conflict was not limited to task groups. As stated earlier, small groups worked well together; but as the expedition group became larger, the potential for conflict increased. The largest group was composed of 20 students. As their trip progressed, the group fractured and formed two well-defined "cliques." One clique was drawn together by prior acquaintance and mutual admiration. The second clique formed in response to the first as they were made to feel that they were not part of the "in" group. This was accomplished by the first clique adopting a name for itself and establishing an exclusive sleeping area each night. Each of the two cliques had six to seven members. The remaining members of the expedition formed a loosely organized third clique for mutual support. The formation of these cliques began the first day of the expedition, but went undetected until the third day when the tension being generated became apparent to the leaders.

Attempts were made to diffuse the tension with organized campfire talks. These efforts met with limited success, and the polarization of the cliques continued. As the rift deepened, clique members would ignore others and engage in juvenile behavior. This included "in" jokes, criticism of everyone and everything, or any behavior which would help define their exclusivity. This fracture and resulting tension completely destroyed the working atmosphere of the task groups, as well as the expedition in general. By the final day of the trip, open hostility was evident.

Moreover, there is evidence to suggest that the tension was transferred to the saddle and pack stock. In 16 years of outfitting experience with hunters and nonhunters, the outfitter had never had a client involved in an accident with one of his animals. On this expedition, there were no less than six incidents involving six different animals resulting in minor injuries to the students. In one case, a horse laid down and

rolled on the rider as they were crossing a beaver pond. In another incident, a different animal threw the rider while we were preparing to depart one of the campsites. On different occasions, some horses became agitated when tied and would exhibit violent behavior until they threw themselves to the ground. The animals involved had been used many times before and were considered dependable and trustworthy. The animals were well trained and had never exhibited such behavior. Furthermore, these same animals have not repeated this behavior pattern since that time. This extreme level of tension created by the fracturing of the group lead us to suspect that the animals were sensitive to the tension and reacted to it.

For the most part, the experiences were positive and the students who participated gained a trust in the capabilities of the trail stock. Some members were afraid of heights. Certain trails required the negotiation of sections which did nothing to dispel this fear. It was at such times that the students learned to trust the mounts. Some even rode with their eyes closed. One participant, Bob Crayne, said, "About the horses..they are absolute professionals at what they do..." Members also learned to trust other members of the expedition. Once a teenage participant, afflicted with arthritis, was asked by the others to explain the deformity of his hands. The level of trust and understanding that had been established enabled him to do so without embarrassment. Immediately upon finishing his explanation, he felt relieved and accepted.

Finally, the self-esteem of most participants was significantly improved. This was in large part due to their overcoming challenges they perceived as high risk. The challenge of the climate with its altitude and capacity to generate severe storms; the challenges of the terrain which was rugged and unforgiving; and the challenge of mastering the skills of

horsemanship. As the students overcame these challenges, their self-esteem grew. In the words of another participant, Bill Hotchkiss, "The entire trip was a tremendous life experience for all of us...the wilderness forced us to become a tight knit group...as most members had not even met each other prior to this trip..."

Conclusion

The positive effects of the wilderness experience on human behavior have been well documented. It was the intent of this paper to report on some of the complex social behavior that can evolve in a wilderness setting.

Negative and positive social behavior have been observed. It was recognized that task assignment is critical in assuring group members treated each other with respect. It was also noted that the size of the expeditions had a direct bearing upon their social structure. Large groups tended to break into cliques which competed with each other for status. The tension generated escalated with time and may have been transferred to the trail stock.

In addition, positive social impacts were observed on group members with low self-esteem. The wilderness experience provided them with an opportunity to deal with others as an equal, and to perform activities that were perceived as high risk. The confidence gained was reflected in their improved self-images.

Literature Cited

Lucas, R. C. 1985. Visitor characteristics, attitudes, and use patterns in the Bob Marshall wilderness complex, 1970-82. Res. Pap. INT-345. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station: 6-7, 16.

Mand, C. C. 1985. Risk recreation in higher education. Trends. 22(3): 43-44.

Petrus, E. F. et al. 1977. Teaching group dynamics in an intensive small group laboratory in a wilderness setting. Annual Meeting of the Southwestern Social Science Association; Dallas, TX: 4-6.

Stankey, G. H. 1980. A comparison of carrying capacity perceptions among visitors to two wildernesses. Res. Pap. INT-242. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station: 5, 24-25.

Zeamer, S. 1975. Developing guidelines for a college coeducational wilderness program. Slippery Rock University: 38-39. M.S. thesis.

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Wilderness Privacy Types: How Important Can They Be?

Carl Hummel and Linda Donovan[1]

Abstract.—The primary purpose of the study was to derive summative scales which assess types of wilderness privacy in terms of satisfaction. Through factor analysis four scales, which consisted of items with segments referring to wilderness settings and activities, were derived—*Literal Solitude* (the physical state of one's being alone), *Shared-Solitude* (the individual's feeling of being along while with special others), *Intimacy* (a small group's privacy away from others), and *Not-Neighboring* (the individual's dissatisfaction with encounters and interactions by strangers). Literal Solitude, Shared-Solitude, and Intimacy tended to be rated relatively favorably; whereas, Not-Neighboring was not.

Privacy, in general, and solitude, in particular, have been acknowledged by some authorities as desirable states in themselves and as leading to benefits for the individual (e.g., Altman 1974, Margulis 1974, Westin 1967). For example, Suedfeld (1982), in his chapter "Aloneness as a Healing Experience," concluded from existent evidence that aloneness (Literal Solitude) counters everyday sensory overloads, and it leads to achieving a transcendent identity and, ironically, to countering loneliness. However, he acknowledged that most people and some psychologists assume that being alone is an undesirable state, and scientific research on the positive effects of solitude is in the fledgling stage.

Attempts have been made to specify various types of privacy in everyday settings. The most widely cited approach is Westin's (1967) theoretical typology which contains four privacy types—*Solitude* (Literal Solitude), *Intimacy* (a small group's privacy away from others), *Anonymity*, and Reserve. Through factor analysis Marshall (1974) and Pedersen (1979) subsequently did derive these four privacy types plus *Not-Neighboring* (including negative attitudes toward people "dropping in" to one's home: Marshall 1974), *Seclusion* (visual and auditory seclusion of

the home: Marshall 1974), and *Isolation* (Pedersen 1979).

With regard to the functions or benefits of privacy, a recurrent theme in the scientific literature is that privacy provides, among other things, various cognitive/identity benefits. These benefits include the following: *Cognitive Freedom* (Hammitt 1982a, 1982b), *Self-Evaluation* (Altman 1974, 1975; Hammitt 1982b; Westin 1967), *Personal Autonomy* (Hammitt 1982b, Hammitt and Brown 1984, Westin 1967), *Self-Identity* (Altman 1974, 1975; Suedfeld 1982), *Emotional Release* (Hammitt and Brown 1984, Westin 1967), and *Reflective Thought* (Hammitt and Brown 1984).

Reflective thought may well be a valuable but scarce activity for most people in everyday environments. In his "model of person-environment compatibility" which focuses on information processes, Kaplan (1983) asserted that human beings have a built-in bias against reflection/contemplation; and, it receives the lowest priority when compared to the model's other cognitive processes of environmental perception, purposive action and inclination, and especially required action. Moreover, reflection/contemplation was described as particularly susceptible to common everyday distractions such as noise, people, and urban sensory overload. We infer that these distractions are more likely to be present in non-privacy situations (cf., Suedfeld 1982).

Because of the resultant infrequency of reflection/contemplation in everyday life, Kaplan (1983) maintained that its positive outcomes are often denied to the individual. The positive outcomes include considering one's past and anticipating the future, integration of long-range goals, and self-examination.

Kaplan (1983) advocated individuals spending time in *restorative environments* in order to be able to combat the presence of distractions upon their return. Restorative environments are intrinsically enjoyable, give one a sense of being away, provide a change of scenery, and are a respite from distractions. Wilderness was specified as a restorative environment of "remarkable compatibility" (Kaplan 1983:326) which had been found to be conducive to high levels of contemplation and tranquility for groups of backpackers who stayed in the wilderness for at least 9 days on trips organized by researchers (Kaplan and Talbot 1983).

In the final phase of their 10-year research program Talbot and Kaplan (1986) found that the *solo* (i.e., Literal Solitude) part of the wilderness experience was rated by the backpackers as having been one of the most enjoyable and, yet, most difficult parts of the wilderness trip. Analyses of subjects' journal entries revealed that the trip resulted in enhanced perceptions of the environment which, in turn, led to increased self-knowledge.

[1]*Department of Psychology, University of Arkansas at Little Rock, Little Rock, AR.*

Also, the trip induced greater feelings of oneness with the environment (cf., Brown 1984).

These outcomes echo cognitive/identity functions of privacy delineated above. We believe that the outcomes of the wilderness trip may have been caused at least in part by the Literal Solitude afforded by the solo, and the ratings of the solo might have been based on the rewarding but arduous process of self-examination.

Findings in surveys using wilderness backpackers (e.g., Haas et al. 1980, Hendee et al. 1978) and an experiment using simulated-wilderness subjects (Riesenberg 1982) seem to corroborate generally the contentions of Kaplan (1983) and the findings of his research team (Kaplan and Talbot 1983, Talbot and Kaplan 1986) with regard to the value of solitude and its tuned-into-nature/tuned-into-self benefits (see Hummel and Miller, in press, for extensive literature review). However, there is often a lack of applications of theory in the conceptualizations and measurement techniques employed (Heberlein 1973). We have found, indeed, slippage and ambiguities in most of the surveys with regard to key concepts such as *solitude* and especially inadequacies in multi-item scales intended to measure a given privacy type—if multi-item scales were used at all (Hummel and Miller, in press).

In an off-site survey of college students who were wilderness campers, Hammitt (1982a, 1982b) did base his research on an information processing theory and Westin's (1967) theory and typology. The single item "how important is solitude to your wilderness experience?" (Hammitt 1982a) elicited a mean response of "very important." Also, Hammitt (1982a, 1982b) derived (multi-item) factors including Intimacy (a type of privacy) and Cognitive Freedom, and each received ratings on the "important" half of the response continuum. But he didn't obtain a Solitude factor from his items which conceptualized

solitude as being essentially isolation.

In this simulation-survey our primary goal was the development and refinement, through factor analysis, of multi-item scales to measure types of wilderness privacy. We further tested Hammitt's (1982a, 1982b) Intimacy factor, and we attempted to construct a (Literal) Solitude factor with items that did not usually refer to isolation which can have pejorative connotations (Hummel and Miller, in press).

In addition, we attempted to construct a multi-item scale to measure what we have coined *Shared-Solitude*, which is the feeling of being alone while with special other(s) (Donovan and Hummel 1984). Other researchers (Hammitt 1982a, 1982b; Marshall 1974) have used a few items which totally or in part refer to Shared-Solitude, but no Shared-Solitude scale evolved. For example, Marshall (1974) retained an item in her Solitude factor which she paraphrased as "...being along 'mentally,' with others present, but not intruding on one's thoughts..." Shared-solitude would seem to have cognitive/identity components, and it could help to explain why wilderness campers typically travel in small groups but rate "Solitude" as desirable (e.g., Hendee et al. 1978).

We also explored how satisfying each privacy type is relative to the others—as suggested by the ratings obtained from simulation subjects.

A secondary goal of this study was to develop thought items and to provide preliminary evidence of the importance of thought experiences in the respective privacy types. We anticipated that thought experiences would be rated as satisfying in all the privacy situations posed, but not in a nonprivacy situation.

Finally, we tested nonprivacy items primarily to try to counter demand confounding characteristics and to provide some evidence of the relative importance of the presence or absence of privacy in a given situation posed.

Method

Subjects

The respondents were 113 college students enrolled in undergraduate psychology courses at the University of Arkansas at Little Rock, an urban university. The median age was 22, the median year-in-college was junior, and the sample consisted of 65% females and 35% males. Except for sex, these demographics fall nicely within the ranges of the typical wilderness camper (Hendee et al. 1968, Hendee et al. 1978).

Subjects were volunteers who earned extra credit by completing the questionnaire in class. The topics of privacy and wilderness experiences had not been discussed in the courses, the purposes of the research were not stated, and the average subject had had a moderate amount of experiences in other outdoor recreation activities and limited backcountry backpacking experiences (cf., Hammitt 1982a, 1982b; Hammitt and Brown 1984).

Materials and Procedure

At the top of the questionnaire the subject was asked to imagine the following event as vividly as possible:

> You go on a backpacking trip with four companions (friends and/or family) in your group, and you stay for 6 days. Your group hikes and camps in a remote area in nature which is preserved in its natural state and in which no modern conveniences or motorized vehicles are permitted (cf., Riesenberg simulation 1982).

The specification of 4 companions and a stay of 6 days were intended to represent a typical wilderness experience, as derived from previous research findings (Donovan and Hummel 1984), and as generally described by Hendee et al. (1978).

The questionnaire consisted of a total of 40 items. Eleven of the items assessed demographics and frequency of participation in outdoor recreation activities. The remaining 29 items were each intended to assess reactions to either one of three privacy types (Solitude, Shared-Solitude, and Intimacy) or Non-Privacy, or Crowding (table 1). Most of the items were newly constructed items by our research team, but others

Table 1.—Mean ratings on privacy, non-privacy, and crowding individual items.

Item	Satisfaction[1]		Frequency-expectation[2]		Item	Satisfaction[1]		Frequency-expectation[2]	
	M	SD	M	SD		M	SD	M	SD
1. Getting away from other people	5.41	1.18	4.10	1.18	17. Having social interactions at our campfire with my companions	5.99	1.05	5.58	1.22
2. Doing things with my companions	5.90	1.05	5.55	1.14	18. Sitting alone at my campfire without having my companions or anyone else nearby	4.15	1.68	3.49	1.44
3. Feeling alone and by myself	3.18	1.54	3.31	1.34	19. Hiking with my companions but with each of us being alone mentally	4.04	1.63	3.74	1.58
4. Seeing other people in the area besides my companions	4.08	1.40	4.14	1.23	20. Having social interactions on the trail with hikers from outside my group that appear	4.72	1.27	4.25	1.36
5. Being near considerate people besides my companions	5.38	1.26	4.55	1.38	21. Having social interactions on the trail with my companions	5.89	1.11	5.64	1.13
6. Feeling solitude	4.77	1.63	4.29	1.38	22. Hiking alone without having my companions or anyone else nearby	4.02	1.81	3.25	1.53
7. Being alone without having my companions or anyone else nearby	4.42	1.72	3.77	1.33	23. Feeling crowded by other people at the campsite	2.43	1.20	3.35	1.60
8. Privacy from most people yet a personal relationship with my companions	5.80	1.25	5.38	1.24	24. Feeling crowded by other people on the trail	2.54	1.11	3.18	1.33
9. An opportunity to socialize with my companions without being interrupted by others	5.79	1.02	5.30	1.13	25. Sitting with my companions at our campfire but with each of us having his/her own private thoughts	4.55	1.41	4.12	1.26
10. A small, intimate group experience, isolated from all other groups	5.52	1.24	4.89	1.36	26. Sitting at my campfire with people from outside my group that appear and sharing each other's own deep thoughts	3.81	1.71	3.15	1.45
11. Being able to limit my attention to only a few chosen people	5.18	1.42	4.83	1.47	27. Sitting with my companions at our campfire and sharing each other's own deep thoughts	5.60	1.40	4.95	1.46
12. Freedom to choose when and to what extent I have to speak and interact with anybody else	5.59	1.17	5.25	1.39	28. Sitting alone at my campfire without having my companions or anyone else nearby and having my own deep thoughts	5.11	1.42	4.19	1.43
13. Being isolated without having my companions or anyone else nearby	3.57	1.65	3.31	1.48	29. Camping out of sight of other groups when possible	5.39	1.64	5.11	1.74
14. Doing things alone without having my companions or anyone else nearby	4.18	1.48	3.79	1.32					
15. Sitting with my companions at our campfire but with each of us being alone mentally	4.18	1.84	3.63	1.59					
16. Having social interactions at my campfire with people from outside my group that appear	4.44	1.32	3.91	1.27					

[1] 1 = Greatly detract from my satisfaction, 4 = Neither add to nor detract from my satisfaction, 7 = Greatly add to my satisfaction.
[2] 1 = Never, 4 = Sometime, 7 = Almost always.

were modifications of items from other research (Donovan and Hummel 1984; Hammitt 1982a, 1982b; Haas et al. 1980; Marshall 1974).

All respondents completed the questionnaire in the classroom, and the responses were anonymous. For the first 29 items listed two responses were required. One rated the frequency-expectation for the item; the other rated how the item would detract from or add to satisfaction in the simulated wilderness experience.

The use of two response continua of these general types is in keeping with the procedure of Rossman and Ulehla (1977). However, the satisfaction scale was substituted for an importance scale for clarity and to avoid confusion. Otherwise, an item could elicit a "high importance" rating either because it described something desirable or because it described something undesirable which would be important assuming it happened or if it warranted avoidance behavior.

Data were submitted to the Principal Factor, Promax Rotation analysis in the SAS computer package (1985). Factor analyses were performed separately for frequency-expectancy response ratings and satisfaction ratings. Consistent with standards established in previous privacy research (Hammitt 1982a, 1982b; Hammitt and Brown 1984; Marshall 1974), factor loadings had to be greater than or equal to 0.40 for items to be retained in a factor; and, only factors with eigenvalues greater than or equal to 1.00 and with more than two surviving items were retained.

Factors obtained for the satisfaction response criterion are emphasized below primarily because satisfaction ratings are more comparable to criteria used in previous research such as the importance criterion used in wilderness and recreation research (Hammitt 1982a, 1982b; Hammitt and Brown 1984; Rossman and Ulehla 1977).

Results

Individual Items

Table 1 shows that the obtained mean ratings for single items range from considerable dissatisfaction and relative infrequency-expectation for items specifying "feeling crowded..." (Item 23: M satis = 2.43, M freq-expec = 3.35; Item 24: M satis = 2.54, M freq-expec = 3.18) to high respective ratings for items specifying activities, such as "social interactions" with companions (e.g., Item 17: M satis = 5.99, M freq-expec = 5.58; Item 21: M satis = 5.89, M freq-expec = 5.64).

With regard to items specifying "private thoughts" or "deep thoughts" (i.e., thought items), those which refer to privacy types each appear in table 1 to have elicited mean ratings on the add-to-satisfaction and frequent halves of the response continua (Item 25 shared-solitude: M satis = 4.55, M freq-expec = 4.12; Item 27 intimacy: M satis = 5.60, M freq-expec = 4.95; Item 28 alone: M satis = 5.11, M freq-expec = 4.19). In contrast, the non-privacy item referring to "people from outside my group" appears to have elicited mean ratings on the detract-from-satisfaction and infrequent halves of the response continua (Item 26 non-privacy: M satis = 3.81, M freq-expec = 3.15).

Factors and Factor Items

Literal Solitude Factor.—As indicated in table 2, the five items which constitute this factor all specify that the individual is literally alone in physical space. Items 7 and 13 are merely designations of the physical states of being alone and being isolated respectively; whereas, the remaining three items contain references to the general activities called doing things (Item 14), sitting at the campfire (Item 18), and hiking (Item 22). The Factor Mean (M satis = 4.07) appears to be negligibly above the

neutral midpoint (4.0) of the satisfaction response continuum.

Intimacy Factor.—This factor also consists of five items (see table 2). In the first four items it is explicitly stated that companions are present, and the following aspects of privacy are specified: privacy from most other people (Item 8), freedom from interruptions (Item 9), isolation from strangers (Item 10), and freedom from attention (Item 11). Item 29 is "camping out of sight of other groups when possible." The Intimacy factor has the highest Factor Mean (M satis = 5.53) of all derived factors.

Shared-Solitude Factor.—Only three items constitute this factor. Each item has the physical presence of companions stipulated, but psychological aloneness is variously alluded to as being alone mentally (Items 15 and 19) and having private thoughts (Item 25). The Factor Mean for Shared-Solitude (M satis = 4.26) appears to be on the add-to-satisfaction half of the response continuum, but, as shown in table 2, statistically it is not significantly different from the Factor Mean for Literal Solitude ($t(112) = 1.43, p < .20$, two-tailed).

Not-Neighboring Factor.—This factor is composed of five items, and all of them were reverse-scored in order to determine the privacy factor name and to calculate the Factor Mean (table 2). When reverse-scored, the responses indicated how satisfying the following were rated: not seeing other people in the area (Item 4), not being near considerate strangers (Item 5), not having interactions with people from outside the subject's group at the campfire (Item 16) and on the trail (Item 20), and, apparently, not having freedom to choose to interact with anybody else (Item 12). The Factor Mean is the lowest (M satis = 3.17) of all four factors.

Discussion

Our primary goal of deriving three summative scales to assess wil-

Factor and factor items	Factor loadings	Factor mean[a]
Literal solitude		
7. Being alone without having my companions or anyone else nearby	0.74	
13. Being isolated without having my companions or anyone else nearby	0.73	
14. Doing things alone without having my companions or anyone else nearby	0.76	4.07₁
18. Sitting alone at my campfire without having my companions or anyone else nearby	0.74	
22. Hiking alone without having my companions or anyone else nearby	0.62	
Intimacy		
8. Privacy from most people, yet a personal relationship with my companions	0.53	
9. An opportunity to socialize with my companions without being interrupted by others	0.55	
10. A small, intimate groups experience isolated from all other groups	0.64	5.53
11. Being able to limit my attention to only a few chosen people	0.66	
29. Camping out of sight of other groups when possible	0.61	
Shared-Solitude		
15. Sitting with my companions at our campfire but with each of us being alone mentally	0.72	
19. Hiking with my companions but with each of us being alone mentally	0.65	4.26₁
25. Sitting with my companions at our campfire but with each of us having his/her own private thoughts	0.75	
Not-Neighboring[b]		
4. Seeing other people in the area besides my companions	0.65	
5. Being near considerate people besides my companions	0.64	
12. Freedom to choose when and to what extent I have to speak and interact with anybody else	0.41	3.17
16. Having social interactions at my campfire with people from outside my group that appear	0.51	
20. Having social interactions on the trail with hikers from outside my group that appear	0.58	

[a]Mean separation within column by *t*(112), *p* < .001, two tailed. Factor means with the subscript "1" are not statistically significant.

[b]Mean for Not-Neighboring is reverse-scored.

derness privacy types was achieved and surpassed in this study. As we anticipated factors were obtained for Literal Solitude, our concept Shared-Solitude, and Intimacy (see table 2). Though not predicted, a Not-Neighboring factor was also derived in our study, as Marshall (1974) had obtained as an everyday-environment privacy type. However, Not-Neighboring is the only factor in our research which has a Factor Mean (*M* satis = 3.17) indicating that it would detract from satisfaction in the simulated wilderness experience posed in the brief written scenario.

In contrast, the other three factors received ratings indicating that each, at the very least, would not detract from satisfaction. Intimacy was rated as contributing substantially to satisfaction (*M* satis = 5.53) and as occurring quite frequently (*M* freq-expec = 5.10). The high ratings for Intimacy are essentially replications of importance ratings of Intimacy obtained in previous research with respondents who had had considerable backpacking experiences (e.g., Hammitt 1982a, 1982b).

Literal Solitude (*M* satis = 4.07) and Shared-Solitude (*M* satis = 4.26) were not rated as very satisfying in themselves by our subjects; Literal Solitude (*M* freq-expec = 3.52) and Shared-Solitude (*M* freq-expec = 3.83) were rated as occurring somewhat less frequently than *sometimes* (4.00). The relatively low satisfaction ratings for Literal Solitude per se do not echo Hammitt's (1982a, 1982b) finding obtained with a single general item which did specify *solitude*, but the relatively low satisfaction ratings tend to substantiate Suedfeld's (1982) contention that most people assume that being alone is an undesirable state—at least when isolation is included as it turned out to be (Item 13) in our Literal Solitude factor (table 2).

Perhaps the brief written scenario we used was not effective with regard to inducing the feeling of solitude one achieves when in a real wil-

derness, or perhaps the low-frequency ratings Literal Solitude received influenced its satisfaction ratings. Yet another possibility, as Hammitt (1982a, 1982b) observed, is that the word *solitude* has positive surplus meaning to experienced backpackers such as his respondents.

The findings on *thought* items in our study are encouraging with regard to people's acknowledging potential benefits of Literal Solitude, Shared-Solitude, and Intimacy in wilderness. As we had anticipated having deep/private thoughts while in a state of privacy was rated consistently as quite satisfying (Literal Solitude: M satis = 5.10, Shared-Solitude: M satis = 4.55, Intimacy: M satis = 5.60). In addition, having such thoughts while in a state of privacy was consistently rated as occurring more frequently than sometimes (Literal Solitude: M freq-expec = 4.19, Shared-Solitude: M freq-expec = 4.12, Intimacy: M freq-expec = 4.95). These findings are particularly impressive when contrasted with the low ratings obtained for the similarly worded but non-privacy Item 26 (M satis = 3.81, M freq-expec = 3.15). Thus it appears that a privacy context is important, and the relative ratings were not elicited by the mere mentioning of thought outcomes (Kaplan 1983).

In future research we will attempt to derive a Seclusion factor as well. Although "camping out of sight of other groups when possible" (Item 29) fell within the Intimacy factor derived in our present study, it has seclusion connotations (cf., Marshall 1974); and it elicited rather high satisfaction (M satis = 5.39) and frequency (M freq-expec = 5.11) ratings. Thus it appears that seclusion in itself might be a very desirable component of simulated and real wilderness experiences.

We also plan to refine and expand each factor obtained in this study, and we hope that each resultant factor will consist of an equal number of direct-scored and reverse-scored items. New items will be tested

which systematically pose viewing scenery, being a part of nature, and self-examination (cf., Hammitt 1982a, 1982b; Talbot and Kaplan 1986) directly within the contexts of privacy types and non-privacy. We anticipate that, when such activities are coupled with Literal Solitude or Shared-Solitude, the satisfaction and frequency ratings will be the highest (cf., Kaplan 1983, Riesenberg 1982, Suedfeld 1982).

Final suggestions for future research include the use of experimental designs so that causal inferences are justified, the construction of more detailed wilderness simulations through the use of scaled videotapes and audiotapes, and the systematic testing of possible associations between separate wilderness privacy/non-privacy types and separate benefits. Subject samples will be expanded to include more experienced wilderness subjects on-site and off-site, and long-term benefits will also be explored.

We anticipate that such future research by us and hopefully others will lead to findings for simulation subjects and real wilderness subjects which echo the benefits of Literal Solitude (and other privacy types) which Olson (1976) described in the following personal account of wilderness privacy benefits:

> I have had my share of solitude and know whereof I speak. It is beautiful to me, for it brings back perspective and the sense of timelessness. I come back to the friends I have left, stronger, better, and happier...My thoughts run more smoothly than before; my perceptions and understanding of life's problems more uncluttered after the cleansing powers of solitude.

Acknowledgements

Literature Cited

Altman, I. 1974. Privacy: a conceptual analysis. In: Carson, D. H., ed. Man-environment interactions: evaluations and applications: part II. Stroudsburg, PA: Dowden, Hutchinson, and Ross.

Altman, I. 1975. The environment and social behavior: Privacy, personal space, territory, and crowding. Monterey, CA: Brooks/Cole Publishing Company.

Brown, M. (1984). Wilderness vision quest. In: Martin, V.; Inglis, M., eds. Wilderness: the way ahead: proceedings of the Third World Wilderness Congress. Middleton, WI: Lorian Press: 213-218.

Donovan, L.; Hummel, C. 1984. The valuing and benefits of wilderness privacy. Symposium conducted at the meeting of the Arkansas Sociological Association; Hot Springs, AR.

Haas, G. E.; Driver, B. L.; Brown, J. 1980. Measuring wilderness recreation experiences. In: Cannon, L. K., ed. Proceedings, Wilderness psychology group annual conference. Durham, NH: University of New Hampshire: 20-40.

Hammitt, W. E. 1982a. Cognitive dimensions of wilderness solitude. Environment and Behavior. 14: 478-493.

Hammitt, W. E. 1982b. Psychological dimensions and functions of wilderness solitude. In: Boteler, F. E., ed. Proceedings, Third annual conference of the wilderness psychology group. Morgantown, WV: Division of Forestry, West Virginia University: 50-60.

Hammitt, W. E.; Brown, G. F. 1984. Functions of privacy in wilderness environments. Leisure Sciences. 6: 151-166.

Heberlein, T. 1973. Social psychological assumptions of user attitude

surveys: the case of the wilderness scale. Journal of Leisure Research. 5: 18-33.

Hendee, J. C.; Catton, W. R.; Marlow, L. D.; Brockman, C. F. 1968. Wilderness users in the Pacific Northwest: their characteristics, values, and management preferences Res. Pap. PNW-61. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station.

Hendee, J. C.; Stankey, G. H.; Lucas, R. C. 1978. Wilderness management. Washington, DC: U.S. Department of Agriculture, Forest Service.

Hummel, C.; Miller, J. [in press]. Conceptualization and measurement of wilderness privacy. In: Herrmann, R.; Bostedt-Craig, T., eds. Proceedings, of the conference on science in the National Parks (Vol. 2). Washington, DC: U.S. National Park Service.

Kaplan, S. 1983. A model of person-environment compatibility. Environment and Behavior. 15: 311-332.

Kaplan, S.; Talbot, J. F. 1983. Psychological benefits of a wilderness experience. In: Altman, I.; Wohlwill, J. F., eds. Behavior and the natural environment. New York: Plenum Press.

Margulis, S. T. 1974. Privacy as a behavioral phenomenon: coming of age. In: Carson, D. H., ed. Man-environment interactions: evaluations and applications, Part II. Stroudsburg, PA: Dowden, Hutchinson and Ross: 101-123.

Marshall, N. 1974. Dimensions of privacy preferences. Multivariate Behavior Research. 9: 255-271.

Olson, S. F. 1976. Reflections from the north country. New York: Alfred A. Knopf.

Pedersen, D. M. 1979. Dimensions of privacy. Perceptual and Motor Skills. 48: 1291-1297.

Riesenberg, R. D. 1982. Revitalizing the American spirit North American style: a comparison of wilderness and city experience. In:

Boteler, F. E., ed. Proceedings, Third annual conference of the wilderness psychology group. Morgantown, WV: Division of Forestry, West Virginia University: 94-108.

Rossman, B. B.; Ulehla, A. J. 1977. Psychological reward values associated with wilderness use: a functional-reinforcement approach. Environment and Behavior. 9: 41-65.

SAS Institute, Inc. 1985. SAS user's guide: Statistics, version 5 editor. Cary, NC: Author.

Suedfeld, P. 1982. Aloneness as a healing experience. In: Peplau, L. A. Peplau; Perlman, D., eds. Loneliness: a sourcebook of current theory, research, and therapy. New York: John Wiley: 54-67.

Talbot, J. F.; Kaplan, S. 1986. Perspectives on wilderness: re-examining the value of extended wilderness experiences. Journal of Environmental Psychology. 6: 177-188.

Westin, A. F. 1967. Privacy and freedom. New York, NY: Atheneum.

Wilderness Perception

Jonathan G. Taylor[1]

Abstract.—Subjective response to environment, a technique developed in environmental psychology, was applied to experience in both a wild area and an urban area. This technique for encouraging closer awareness of and contact with environment has significant therapeutic and personal-growth value. In addition, comparison of wild-area and urban-area responses provides new experience satisfaction categories that can then be empirically tested. Combining subjective response with more objective perception-testing strategies can help integrate the field of perception of environment/ perception of wilderness.

Extensive research has been conducted over the past two decades on wilderness values and benefits. Shafer and Meitz (1969) reported on the importance of aesthetic and emotional experiences in overall satisfaction with wilderness environments. Rossman and Ulehla (1977) noted that enjoying the beauties of nature was extremely important to people and most likely to occur in wilderness settings, while Brown and Haas (1980) stressed the importance of the enjoyment of nature. All of these researchers have shown that socialization is of little importance in wilderness experience. Although Klausner (1971) reported unique benefits resulting from social interactions in natural-areas, Feingold (1979) found the "social dimension" to be the same for both city and wilderness vacations. Stankey (1972) demonstrated that wilderness meets the need for solitude, and Driver (1972) that it relieves stress through escape from urban pressure. Both Gibson (1979) and Kaplan and Talbot (1983) have shown that wilderness experience has lasting psychological benefits for the user.

An important question in reviewing this important work on the value of wilderness and wilderness experience to the human psyche is, "From whence are drawn the categories which have been tested among wil-

derness users?" There is a real danger here that research along this vein would potentially be upholding favored hypotheses simply because the response categories are established by the researcher. Regarding the issue of what people seek when they go to wilderness areas, Kaplan and Talbot report on a few recent studies which "have sought to clarify such issues and to find some order among the many perceived characteristics of wilderness experience. Drawing on earlier studies for specific items, the more recent studies have included lists of a wide variety of purported values and have obtained ratings of the extent to which these reactions would characterize wilderness experience..." (Kaplan and Talbot 1983:165).

Problem Statement

Research into how human beings perceive environments—the values and benefits various environmental settings hold for persons—has advanced as a general field over the past two decades. However, this field remains somewhat incoherent, far short of being a unified discipline. Sell et al. (1984) reported perception-of-landscape research divided into four distinct traditions or paradigms, stemming from two separate drives: the need for applied perception-of-environment research, and the search for understanding of human-envi-

ronment interaction. Each of these drives split into two distinct approaches as illustrated in figure 1.

The Expert approach relies on trained professional assessment of landscape quality. It is assumed that trained professionals are capable of objectively assessing those landscapes, or attributes of landscapes, important to people and the purposes to which people wish to put those landscapes. There are two subcomponents to this paradigm: the landscape architecture/fine arts base and the ecological/resource management base. Carlson (1977) made a strong statement in defense of the aesthetic Expert approach as the only reliable means of objectively assessing scenic quality. Leopold (1969) used a clear assumption that natural, unmodified ecosystems carry the highest aesthetic value in assessment of river basin scenic quality.

The Psychophysical approach utilizes empirical testing of public response to environments. This approach, with strong theoretical reliance on Gibson's work (1977) on "affordances," assumes that different perceptions of landscape quality and/or utilization are "afforded" by the environment as external stimulus. Peterson (1974) used the psychophysical research approach directly to evaluate the quality of a wilderness environment.

The Cognitive approach, searching for the meaning of environments to humans, has several theoretical ante-

[1]Department of Geography and Recreation, University of Wyoming, Laramie.

cedents and current directions. Appleton (1975) proposed that humans, evolving as both hunting and hunted creatures, have developed an inherent preference for landscapes that provide both prospect (a point from which to see) and refuge (where one cannot readily be seen). Charlesworth's theory, that species recognize and prefer environments to which they are best adapted, has been carried forward into landscape perception research (R. Kaplan 1979; S. Kaplan 1975, 1979).

The Experiential or Phenomenological approach deals with the nature of the human-environment interaction from a process philosophy perspective, with that interaction itself as the entity of study. This sets the experiential paradigm apart from the others where the human and the landscape are the primary entities for study. David Seamon (1962) is a principal proponent of this approach to understanding the meaning of human-environment interaction.

In a separate study, Daniel and Vining (1983) found the same divergence in environmental perception research, applying five categories (distinguishing between the biological- and design-expert approaches). These environmental perception research paradigms are applied in separate disciplines and the results published in separate journals. The resource management and landscape journals started in the 1960's, with almost exclusive reliance on the Ex-

pert paradigm, but subsequently shifted more to the Psychophysical paradigm. Articles in the Cognitive paradigm come primarily from psychology, and the Psychophysical paradigm is also heavily used in psychology. Research into human use and satisfaction in recreation environments is almost exclusively Psychophysical. Almost all of the Experiential paradigm research on environmental perception is conducted and published by geographers. Thus, the approaches are not only theoretically disparate, but are physically separated into different academic and publishing traditions. Until this research is integrated, environmental perception will remain a scattering of related, but artificially separated, research (Zube et al. 1982).

Objectives

To fully understand human perception of a wilderness experience, we will have to begin integrating these research paradigms. As a first step toward this integration, we propose first using in-depth, exploratory techniques from the experiential approach, and then validate that understanding with empirical testing techniques developed within the Psychophysical paradigm. Then it will be possible to develop theory as well as expertise in wilderness perception based on validated research. The research reported here was designed to

probe whether wilderness experience elements, suitable for testing, could be determined through use of a phenomenological technique designed by Bechtel (1985) called "Subjective Response to Environment." It also provides a retrospective review of some of the categories used in prior perception-of-wilderness research. Are these proposed wilderness benefits and satisfactions substantiated by this probing of human experience?

Method

Bechtel has utilized "subjective response," from environmental psychology, as a direct means of investigating human-environment interaction. With this technique, subjects are brought closer to and become more consciously aware of a particular environment, their interactions with that environment, and the psychological stimuli triggered by interaction with that environment. "Subjective response" is thus a tool bridging both the cognitive (meaning of environment) and experiential (human-environment interaction) research paradigms.

To gain insight into the distinctive meaning of a wild-area environment, the research group wrote subjective responses to two environmental settings: a landscaped mall area in the middle of the University of Wyoming campus, and a forested canyon area (White Rock Canyon) on the
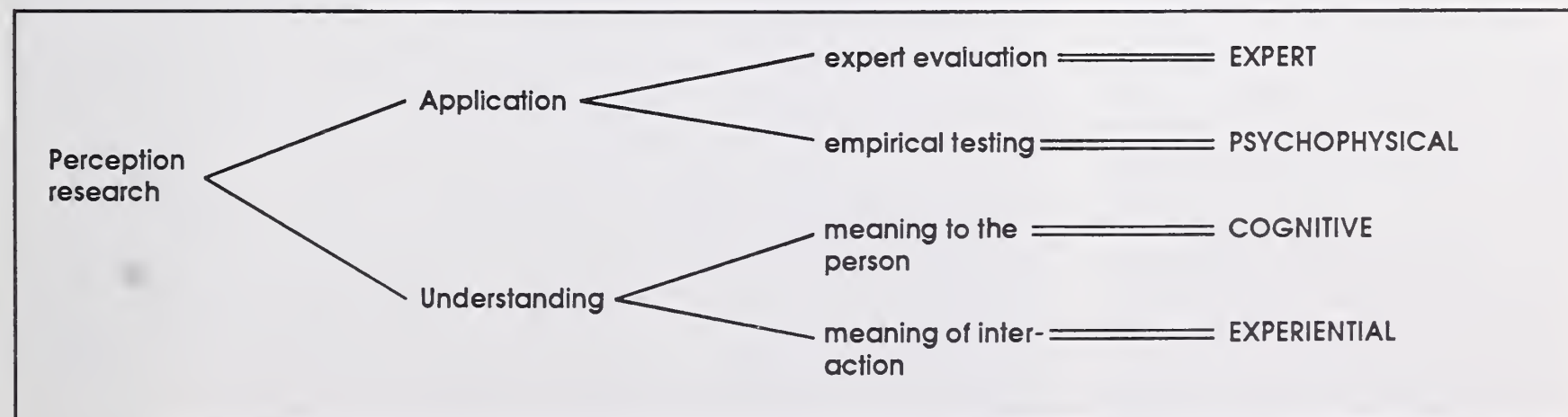
Figure 1.—The development of landscape perception research paradigms.

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northern end of the Snowy Range in southeastern Wyoming. The mall environment is greatly softened by vegetation. Even in January and February, when these subjective responses were written, the lawn base and surrounding evergreen vegetation provide visual separation from the surrounding buildings and automobile parking areas. The White Rock Canyon environment, although not a roadless wilderness, is quite isolated, especially in the winter when access is difficult at best. Indeed, some of the participants questioned, enroute, whether this environment was accessible at all.

The research group consisted of the professor and eight students in a Leisure Behavior/Perception of Environment seminar. We do not offer this as a sample representative of the population at large, nor as a valid sample of wild-area users. However, the results of these respondents' subjective responses can and do show insight into human perception of wild areas. The contents of these subjective responses were then analyzed to find commonalties of response among respondents within a specific environmental setting. These shared responses were then compared between the two settings to find what distinguished subjective responses to the wild, natural area from responses to the landscaped university mall. These elements and their components may be suitable for future empirical testing using psychophysical techniques.

This is not an entirely new approach to perception of wilderness research. It parallels somewhat work done in the 1970's by the Kaplans and their associates (see Kaplan and Talbot 1983). Participants in the Outdoor Challenge program kept journals of their wilderness experience and filled out self-administered surveys on their feelings in these settings at different points in time. Content analysis of the journals has revealed a number of wilderness benefits quite similar to the results of our

subjects' responses to the White Rock Canyon environment.

Results

When elements from the separate subjective responses were pooled and compared, many similarities among responses were apparent in a variety of categories. Certain elements were observed by every one of the participants, although to varying degrees. As an overall result, the strongest response to the campus mall setting concerned observation of other people. In the wild area, responses were concerned much more with self-awareness. Table 1 shows distinctive differences in viewpoints of the two test environments. Most accepted the mall, but in a more structured perspective. They considered the man-made environment to

represent nature whereas the White Rock Canyon setting *was* nature.

This—combined with the strong responses to the wild area as peaceful, tranquil, and expanding of attention as opposed to responses to the mall as structured, controlled, requiring confined, focused attention—supports some of the work of Rachael Kaplan on voluntary attention. Kaplan (1977) suggests that natural environments, being environments to which humans are adapted, require no voluntary or forced attention and thus are psychologically more relaxing than man-made environments.

Many of the elements mentioned in the subjective responses can be grouped into the following categories: sound, smell, setting, emotions, people, time, ambience, and awareness of the environment. Table 1 lists the variety of responses given within these categories. The results in this

Table 1.—Perception response elements.		
Elements	Snowy Mountains	Campus mall
Sound	Silence; snow voices (interfere)	Bells, cars, dogs, people; feet; voices
Smells	Crisp; pine; spicy	Pipe (disrupts) exhausts
Setting	Unstructured; accepted as nature	Structured; man-made to *represent* nature; safety and danger
Emotions	Peace; tranquility; non-controlled; do things here; acceptance; "fit" (niche)	Disturbances; controlled by others; do things elsewhere; rebellion (mixed)
People	Isolation; contemplation; relationship to self and change	Relationship to crowds; people watching
Time	Doesn't matter; restricted; past; reflection	Conscious; now; present
Ambience	Peacefulness; serenity	Busy; unconscious
Awareness of environment	Attention expanded	Attention confined

table parallel findings of other researchers such as Kaplan and Talbot (1983) regarding wilderness perception. A decade of research by the Kaplans and their co-workers has shown wilderness to be highly restorative. Human motivations and priorities in wilderness include: (1) tranquility, peace, and silence; (2) self-integration and wholeness; and (3) integration with the environment—oneness. Compare these results with those in table 1: emotions—peace, tranquility; sound—silence; people—contemplation, relationship to self and change; emotions—acceptance, "fit" into the environmental niche.

A review of table 1 shows that this research also corroborates the work of Shafer and Meitz, Rossman and Ulehla, Brown and Haas, Stankey, and Driver reported earlier. Emotional and aesthetic experiences as well as enjoyment of nature are important, and wilderness experiences provide solitude and relieve stress. Given this rather wide corroboration, has the subjective response exercise provided anything new?

Conclusions

First, it is critically important to point out the inherent therapeutic, personal growth nature of the subjective response itself. Bechtel (1985) reports several patterns in our culture whereby we ignore subjective responses to environments. Often, when we detect some anxiety-provoking stimulus in the environment, "we steer away from it without being aware that there has been a change in course." Further, we are trained in our education to be objective in our assessments of environment. Social sciences and design disciplines tell us "that what is important is the objective, measurable stimuli that the environment affords" (p. 2). "But the theory of subjective response would maintain, we go too far. We repress or put out of mind too many associa-

tions that can enrich and make life so much more meaningful. Learning to do a subjective response is no more than learning to bring up those responses which have been repressed out of habit...The release of energy and emotion is critical...it is a critical lesson in learning to tune into one's feelings...In short, the subjective response is learning better to enjoy life as a whole, learning not to suppress feelings that are a natural and compelling response to any environmental stimulus" (p. 5 and 8).

Combining the therapeutic value of subjective response with the peaceful, tranquil, and self-contemplative elements of wild areas provides a highly effective means for relieving stress, achieving inner peace, improving communication skills both with oneself and with others, and gaining the broad spectrum of secondary personal and social benefits that stem from these.

At the level of development of perception-of-wilderness knowledge and theory, there is also important information to be gained from this comparison of subjective response to both wild area and man-made environments. Ittelson (1973) provides guidance in theoretical development in perception of environment research by identifying a minimum set of considerations "which must be taken into account in any adequate study of environment perception research" (p. 12-15):

1. Environments surround—they permit movement and exploration and force the observer to become a participant.

2. Environments are multimodal—they provide information that is received through multiple senses.

3. Environments provide peripheral as well as central information...from outside as well as inside the focus of

attention.

4. Environments provide more information than can be used—they can simultaneously provide redundant, inadequate, ambiguous, conflicting, and contradictory information.

5. Environment perception always involves action—they cannot be passively observed.

6. Environments always have ambience.

Although these minimum criteria have long been recognized, not all of their components are easily testable. As such, they are often intentionally or inadvertently ignored. As a prime example, Ittelson's second criterion is quite obvious, and yet, by far, the majority of research using lists of elements purported to be important in experiencing wilderness has relied almost exclusively on visual content. Yet content analysis of subjective responses to comparative environments shows that both sound and smell are critical perceptual elements. Indeed, tactile references, although not included in table 1, were fairly common—the feel of cold, the brush of wind across one's face.

Comparatively little research has been done on the contribution of sound to perception of environment. Virtually none has been put forward on olfactory or tactile components. Carter and Stringer (1975), in a chapter on "The Acoustic Environment," note the importance of "correctness" of a sound environment—with matched sensory inputs to other systems. For example, an urban environment is expected to have urban sounds. Further, they point out that environmental noise "can frequently produce a general psychological effect, easy to recognize and apprehend, but less easy to define neatly, which has become known as

"annoyance"…It is important to be aware that latent annoyance can exist widely at levels below which people would make formal complaints, but which nevertheless represent a diminution of the quality of their lives" (p. 67).

The descriptions of the noise environment of the campus mall, in the subjective responses, are themselves cacophonous: bells, cars, car motors, dogs, people talking, calls, sound of feet. "Background sound is now human—only an occasional laugh or loud word to punctuate the general sound of people talking. The bird sound falls out of reach, but more cars start up so the vehicle noise competes…Sound first, I seem to orient a lot towards sound." Even at this level, this campus mall is relatively low in sound annoyance by any national standard.

In the wild area there is an initial annoyance, expressed by most participants, with each other's voices, but this quickly falls as the group disperses. Then the most significant sound environment perception is a strong awareness of silence. Part is the relative silence of natural environments—apart from machinery and people. But a very large part is "the silence of snow. Deep silence that almost sponges away sound." Then, "the noise of a plane overhead. (The pilot) seems to have no notice of the effect he may be having on so many people and places below. How can he dominate the situation so fully when no one below can have even the slightest effect on him, so far above. How can he presume to intrude his jet-engine noise into this environment, this private, otherwise quiet place where I have found some seclusion…Who should determine, or at least have some influence over, the ambience of a place? The users or the intruders? I suppose the latter does not intend to change this place, but he does—and millions of other little places, grand places, human environment places—each time he flies. Maybe we need to work on that if

wilderness experience is going to remain."

The theoretical implication of this research is that cognitive and phenomenological responses to wild environments can provide information for use in empirical testing to determine the values of wilderness landscapes to the user. Further steps will be to use the elements found through subjective response to set up empirical tests of human response to wilderness.

Acknowledgments

Literature Cited

Appleton, J. 1975. The experience of landscape. New York, NY: John Wiley.

Bechtel, R. B. 1985. Subjective response. University of Arizona. [Unpublished Mimeo]

Brown, P. J.; Haas, G. E. 1980. Wilderness recreation experiences: the Rawah case. Journal of Leisure Research. 12: 229-241.

Carlson, A. A. 1977. On the possibility of quantifying scenic beauty. Landscape Planning. 4: 131-172.

Carter, D.; Stringer, P. 1975. Environmental interaction. Madison, CT: International Universities Press, Inc.

Daniel, T. C.; Vining, J. 1983. Methodological issues in the assessment of landscape quality. In: Altman, I.; Wohlwill, J. F., eds. Behavior and the natural environment. New York: Plenum Press: 39-84.

Driver, B. L. 1972. Potential contributions of psychology to recreation resource management. In: Wohlwill, J. F.; Carson, D. H., eds. Environment and the social sci-

ences. Washington, DC: American Psychological Association: 233-244.

Gibson, J. J. 1977. The theory of affordances. In: Shaw, R.; Bransford, J., eds. Perceiving, acting, and knowing: toward an ecological psychology. Hillsdale, NJ: Erlbaum.

Gibson, P. M. 1979. Therapeutic aspects of wilderness programs: a comprehensive literature review. Therapeutic Recreation Journal. 13: 21-33.

Ittelson, W. H. 1973. Environment and cognition. New York, NY: Seminar Press.

Kaplan, R. 1977. Preference and everyday nature: method and application. In: Stokols, D., ed. Perspectives on environment and behavior. New York: Plenum Press: 235-250.

Kaplan, R. 1979. The green experience. In: Kaplan, S.; Kaplan, R., eds. Humanscape. North Scituate, MA: Duxbury: 186-193.

Kaplan, S. 1975. An informal model for the prediction of preferences. In: Zube, E. H.; Bush, R. O.; Fabos, J. G., eds. Landscape assessment: values, perceptions, and resources. Stroudsburg, PA: Dowden, Hutchinson and Ross.

Kaplan, S. 1979. Perception and landscape: conceptions and misconceptions. In: Elsner, G. H.; Smardon, R. C., eds. Our national landscape. Gen. Tech. Rep. PSW-35. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Forest and Range Experiment Station.

Kaplan, S.; Talbot, J. F. 1983. Psychological benefits of a wilderness experience. In: Altman, I.; Wohlwill, J. F., eds. Behavior and the natural environment. New York: Plenum Press: 163-203.

Leopold, L. 1969. Landscape aesthetics. Natural History. 73: 36-45.

Peterson, G. L. 1974. Evaluating the quality of the wilderness environment. Environment and Behavior. 6: 169-193.

Rossman, B. B.; Ulehla, Z. J. 1977. Psychological reward values associated with wilderness use. Environment and Behavior. 9: 41-66.

Sell, J. L.; Taylor, J. G.; Zube, E. H. 1984. Toward a theoretical framework for landscape perception. In: Saarinen, T. F.; Seamon, D.; Sell, J. L., eds. Environmental perception and behavior: inventory and prospect. Research Paper No. 209. Chicago: Department of Geography, University of Chicago.

Shafer, E. L., Jr.; Meitz, J. 1969. Aesthetic and emotional experiences rate high with northeast wilderness use. Environment and Behavior. 1: 187-197.

Stankey, G. H. 1972. A strategy for the definition and management of wilderness quality. In: Krutilla, J. V., ed. Natural environments: studies in theoretical and applied analysis. Baltimore, MD: Johns Hopkins University Press: 88-114.

Zube, E. H.; Sell, J. L.; Taylor, J. G. 1982. Landscape perception: research, application, and theory. Landscape Planning. 9: 1-33.

Perspectives on Wilderness: Testing the Theory of Restorative Environments,

Terry Hartig, Marlis Mang, and Gary W. Evans[1]

Abstract.—In both studies, greater beneficial change is hypothesized for natural environment conditions. Results from both studies support the hypothesis of greater emotional restoration, while Study 1 results also support the mental restoration hypothesis. Physiological readings taken in the second study show no restoration differences between conditions. Evaluations of different environments in terms of the theory, obtained in Study 2, are linked to the emotional and mental outcome measures. The pattern of results is seen as supportive of the theory.

Poets, writers, philosophers, and artists have long held that natural environments refresh both body and mind by offering respite from the stresses of life in the "civilized" world. More recently, scientists have begun to examine the hypothesis that natural surroundings can function in a restorative capacity, enabling a return to physical and psychological health following experiences of overload or excessive stress.

Some empirical support for the restoration hypothesis comes from research by Ulrich (e.g., 1979, Ulrich and Simons 1986). In an early study, a broad-effect test was administered before and after mildly stressed participants viewed slides of either nature or urban scenes (Ulrich 1979). The results suggest that the group shown urban scenes experienced a clear trend toward lower levels of psychological well-being, while the group exposed to the nature scenes demonstrated consistent improvement in well-being. A more recent study found differences in rates of physiological recovery from a stressor as a function of the type of environment participants were exposed to through a video simulation (Ulrich and Simons 1986). Recovery was measured in terms of muscle tension, skin conductance, and pulse transit

time, a blood pressure correlate. When compared with groups exposed to traffic and pedestrian mall simulations, the group that viewed a nature simulation showed significantly faster and more complete recovery. While both studies support the hypothesis that nature has restorative properties, the fact that the results were produced in short-term simulation situations raises the question of whether replication under naturalistic conditions would yield similar findings.

Research on wilderness therapy programs offers some support for the more general hypothesis that experiences of wilderness are psychologically beneficial. The literature on programs designed to maximize positive effects of wild nature settings on humans has been reviewed by Turner (1976) and Gibson (1979). Turner's review article examined 14 wilderness programs and noted 12 claiming "substantial or significant improvements" on outcomes such as body attitude, locus of control, and self-concept. Gibson (1979) critically assessed 21 studies of wilderness programs. Virtually all reported some positive result, leading to the conclusion that wilderness programs "can and do result in positive changes in the self-concepts, personalities, individual behaviors, and social functioning of the program participants."

Parallel findings from the studies reviewed by Turner (1976) and Gi-

bson (1979) strengthen arguments that wilderness experiences provide a variety of benefits. However, the strength of these arguments should be tempered by the knowledge that the research is characterized by numerous methodological flaws. Among the shortcomings found by Gibson (1979) were inadequacy of outcome measures, biased or inadequate samples, lack of random assignment to groups, and lack of equivalent comparison groups.

Unlike participants in the programs considered above, participants in the Outdoor Challenge Program (Hanson 1973) were not members of special problem groups. This program was the focus of a 10-year research effort that examined the psychological benefits of extended wilderness experiences for more typical individuals. Initial evaluative studies (Kaplan 1974, 1977) established evidence for positive changes in self-perception as a consequence of wilderness experiences. Subsequent research was concerned with the processes that unfold during the course of a wilderness experience and with the exact nature of the changes that participants experienced. One outcome of this research was a theoretical perspective on person-environment factors that might facilitate restorative experiences (Kaplan and Talbot 1983).

Kaplan and Talbot (1983) consider restoration as an outcome of the operation of four factors in human-en-

vironment interactions. The first of these, being away, need not involve geographical distancing. Rather, it might involve distancing oneself from distractions or from one's usual work. It might mean "taking a rest from pursuing certain purposes, and possibly from mental effort of any kind" (p. 187). However, while being away may be necessary for restoration, it alone may not suffice. Going from an environment filled with distraction to one lacking elements of interest may result in boredom rather than restoration.

For restoration, an environment should also present contents and processes that hold one's interest. It should offer opportunities for learning and involvement. In short, the environment should facilitate fascination. Fascination, or involuntary attention (James 1892; cited in Kaplan and Talbot 1983, p. 188), can be considered as one end of the attentional spectrum. At the other end would be concentration. When environmental demands are such that functioning requires concentration over extended periods, attentional deficits may accumulate, contributing to mental fatigue (Kaplan 1987). Recovery from mental fatigue requires less use of concentration; thus, restorative environments would be characterized by a greater congruence between functioning and fascination.

And yet, without some framework in which to fit fascinating elements and processes, an environment may be a source of confusion rather than a means of restoration. Thus, coherence may be another important quality of restorative environments. Kaplan and Talbot (1983) postulate three levels of coherence. Pattern coherence refers to "the interrelatedness of the immediately perceived elements of the situation" (p. 190). Distance coherence refers to the capacity of the environment to give one the sense that there is "a continuation of the world beyond what is immediately perceived" (p. 190). Higher-level coherence involves "consistency

between what one sees and what one knows about the world as a whole" (p. 190). When experienced as coherent, environments reward efforts to understand them with increased familiarity and security; exploration and contemplation increase confidence, not confusion.

Still, being away, fascination, and coherence may not be sufficient; a South Sea island might not be restorative for the one who is shipwrecked on it. In other words, if the person-environment relation is not characterized by compatibility, then the potential for restoration is diminished. Compatibility refers to the match between "environmental patterns, the individual's inclinations, and the actions required by the environment" (Kaplan and Talbot 1983). It exists in situations where "one's purposes fit the demands imposed by the environment and...the environmental patterns that fascinate also provide the information needed for action (p. 190-191). In more simple terms, in situations where what one wants to do is what one needs to do, the potential for a restorative experience should be relatively high.

The theory of restorative environments provides a useful perspective for understanding the wilderness experience in terms that can be used to evaluate other human-environment interactions. Thus, the theory enables comparisons between wilderness experiences and experiences of other environments. Kaplan and others do not deny the ability of other environments to provide a restorative experience; however, they suggest that wilderness environments often hold the greatest potential for restorative experiences (Kaplan and Talbot 1983). This idea draws support from studies by Rossman and Ulehla (1977) and Feingold (1979).

The objectives of the present program of research were to more rigorously test the theory of restorative environments, describe the therapeutic agents that might function in any natural setting, and broaden the view

of outcomes that might be expected as a result of natural environment experiences. This paper focused on two studies carried out in natural settings. Both studies employed methodologies that addressed the concerns raised by Gibson (1979).

The first study was more exploratory in nature. It sought to examine the restorative experiences people might encounter in wilderness environments, as compared to restorative experiences available from vacations in non-wilderness settings. The theory of restorative environments was used to guide selection of outcome measures that tap into presumably restorative effects of wilderness experiences. While Kaplan and Talbot's (1983) research emphasized mental aspects of restoration, the position taken in this study was based on a more holistic view of human functioning. It was assumed that the restorative effects of wilderness would not be limited to the mental level, but would manifest themselves simultaneously on emotional, mental, physiological, and spiritual levels. This assumption is supported by Ulrich's (1979, Ulrich and Simons 1986) research.

The following hypotheses were tested in the first study.

1. Compared to a baseline control group and a non-wilderness vacation control group, participants in backpacking trips are expected to show higher levels of emotional and mental restoration.

2. Compared to baseline and non-wilderness vacation control groups, the backpacking group will show higher restoration scores at a 3-week follow up.

Study 1

Method

Design.—The study applied a non-equivalent control group design.

Participants in backpacking, non-wilderness vacation, and baseline control groups received pre- and posttesting and a 3-week follow-up. There was a time lapse of 4 to 7 days between pre- and posttesting.

The backpacking group consisted of 25 members of privately initiated, moderately strenuous wilderness backpacking outings, ranging in length from 4 days to 1 week, with an average of about 6 hours of hiking each day. This definition of "moderately strenuous" was derived from the expert ratings of backpacking trips advertised by the Sierra Club (Outings Sierra Club 1983).

Twenty-five individuals involved in their regular day-to-day life made up the baseline control group, while the vacation control group included 18 people who undertook non-wilderness vacation trips of 4 to 7 days.

Participants.—Two criteria were applied in the selection of participants for the three groups. The first was a relatively high level of physical conditioning. This criterion was employed to guard against an alternative explanation for restorative effects of wilderness experiences; that is, rather than the wilderness environment per se, physical exercise inherent in wilderness experiences may contribute to increased psychological well-being (Wayburn 1980).

The second selection criterion was qualification as an experienced backpacker. To qualify, individuals had to have completed at least three overnight wilderness backpacking trips prior to the data collection. As a design strategy, having participants with backpacking experience helped to control for a self-selection variable that has troubled much wilderness research: interest in and inclination toward wilderness.

The 68 participants were recruited from a number of places. Some baseline and vacation control group members were drawn from a group of Sierra Club members who were participating in weekly 2-hour conditioning hikes. Additional control group members were recruited from a basic mountaineering course taught by the local Sierra Club chapter, from the circle of personal acquaintances and friends, and through the Cooperative Outdoor Program at the University of California, Irvine. Members of the backpacking group were recruited at the trailhead where they were to begin their trip.

The typical participant was middle-aged, somewhat more likely to be male than female, and highly educated. More than two-thirds of the sample had completed college or were involved in post-graduate work. Most participants were students or occupied technical, professional, or managerial positions. The majority of participants were born and currently living in urban environments. Almost all participants were living in California at the time of the study.

Settings.—Participants in the backpacking group began their trip at either the Cedar Grove or the South Lake trailhead in the Sierra Nevada Mountains of California. The area around these trailheads can be described as alpine wilderness, with striking glacial topography, wooded valleys, and numerous lakes, streams, and meadows.

Members of the non-wilderness vacation control group took trips from home that did not involve exposure to wilderness. Typically, these trips involved travel to other towns and cities to visit with family and/or friends. Those in the baseline control group were engaged in their usual day-to-day activities in the Orange and Los Angeles Counties area of southern California.

Dependent measures.—Because it was expected that restoration would be manifested on a number of levels, a variety of dependent measures was necessitated. Among the dependent measures were two scales used to test for emotional restoration, which was operationalized as the relative absence of negative feelings (e.g., fear, anger, aggression, sadness) and the predominance of positive feelings (e.g., happiness, playfulness, care for others). One of the emotional restoration measures was the Zuckerman Inventory of Personal Reactions (or ZIPERS; Zuckerman 1977). The ZIPERS is a broad-effect test consisting of twelve 5-point scales that reflect individuals' feelings of fear arousal, positive effect, anger and aggression, attentiveness and concentration, and sadness. Prior research indicates sound reliability and validity for the ZIPERS (Zuckerman 1977). The ZIPERS was used by Ulrich in the studies referred to earlier (Ulrich 1979, Ulrich and Simons 1986).

The Overall Happiness scale (or OHS; Campbell et al. 1976) was also used to test for emotional restoration. Response to the scale involves rating one's overall happiness during the last few days on a happiness thermometer. The thermometer provides a range from zero, very unhappy, to 100, very happy, graded in increments of ten.

Mental restoration was operationalized in terms of performance on a task requiring voluntary attention. The dependent measure used to test for mental restoration was proofreading performance. Participants were asked to discover errors (e.g., misspellings, grammatical, and typographical errors) in a text five and one-half pages in length. There were, on the average, 10 errors per full page. A time limit of 10 minutes was set on the task. Half of the participants in each of the three groups had a different proofreading text at pretesting and at posttesting. Also, the two texts were rotated at pre- and posttesting. These strategies were employed to balance possible differences in the difficulty of the two texts and to guard against practice effects. No long-term follow-up on proofreading was conducted because of logistical issues.

Procedure.—On consecutive weekends during the months of July and August 1983, groups of individuals setting out on backpacking

trips were addressed by the experimenter at the Cedar Grove and South Lake trailheads. Backpackers were asked to participate in the study if they passed initial screening with respect to length and difficulty of their planned trip and their prior backpacking experience. After pretesting eligible individuals, arrangements were made to meet with the participants at their exit points, where posttesting took place. Both pre- and posttesting were carried out directly at the trailheads. Quiet areas away from parking lots and trails were chosen as testing settings so that participants would not be distracted during testing.

Participants in the baseline control group were tested following a 4- to 7-day time lapse between pre- and posttesting. Participants in the vacation control group were pretested before they embarked on their trips and posttested upon their return. The 3-week follow up was conducted through the mail, as participants' residences were widely dispersed through California and other states.

The sequence in which the dependent measures were administered was held constant over time as much as was possible. At pretesting, participants were instructed to complete the ZIPERS first, the OHS second, then the proofreading task, and, finally, the Wildernism-Urbanism scale (Hendee et al. 1968). The Wildernism-Urbanism scale was used to assess attitudes toward wilderness. The sequence at posttesting was as follows: ZIPERS, OHS, the proofreading task, and a background information questionnaire. At the follow-up, participants were instructed to first complete the ZIPERS and then the OHS.

Results and Discussion

A series of one-way analysis of variance tests performed on the demographic and background variables indicated that the three groups were similar with respect to the demographic characteristics of age, sex, education, occupation, birthplace, current residence, time lived at birthplace, and country/state of residence. The three groups were also similar with respect to membership in conservation organizations, age at first wilderness backpacking trip, time since last backpacking trip, amount of backpacking during the last year, self-ratings of physical fitness, adherence to fitness schedules, and number of fitness training hours per week. Finally, the three groups did not differ in attitudes toward wilderness as measured with the Wildernism-Urbanism scale (Hendee et al. 1968). For more details on group background characteristics see Mang (1984).

Emotional restoration.—A series of one-way analysis of variance tests identified no statistically significant differences between the groups at the pretest on the OHS and on four of the five factors of the ZIPERS. Statistically significant differences, $F(2, 65) = 5.06, p < .00$, were found for the positive effect factor. At pretesting, the backpacking group indicated significantly higher levels of positive effect than the two control groups, which were very similar to each other. That the groups were similar

with respect to five of these six measures indicates that levels of emotional well-being were comparable across groups prior to the treatment.

Examination of the time-by-group interaction for the ZIPERS revealed no significant effects: for the fear factor, $F(4, 130) = .63, p < .64$; for the anger/aggression factor, $F(4, 130) = .40, p < .80$; for the sadness factor, $F(4, 130) = 1.30, p < .27$; for the positive effect factor, $F(2, 65) = 1.43, p < .24$; and for the attentiveness factor, $F(4, 130) = 2.17, p < .07$. For overall happiness, however, there was a significant effect, $F(4, 130) = 3.07, p < .01$.

The results suggest significant time-by-group interaction effects only for the Overall Happiness scale. For this outcome measure, tests of simple main effects (Winer 1971) indicated no significant differences at pretesting, $F(1, 40) = 1.95, p < .17$, and posttesting, $F(1, 40) = .81, p < .37$. Statistically significant differences existed at the time of the follow-up, $F(2, 36) = 4.16, p < .02$. Three weeks after the backpacking trip, the backpacking group seemed to experience higher levels of overall happiness than the vacation and baseline control groups.

In sum, the OHS was the only measure of emotional well-being that produced findings corroborating the hypothesis of increased emotional well-being as a result of a wilderness experience. Interestingly, differences between the three groups were not found at posttesting, as was hypothesized, but only at the time of the follow-up (fig. 1). The sharp decline demonstrated by the backpacking group between pretest and posttest should not be surprising, according to Kaplan (personal communication, August 20, 1985); the reentry period "is a time of contrasting and conflicting feelings...when the mood outcomes are by no means obviously positive." Finally, while Ulrich's (1979) ZIPERS results were not reproduced, the overall happiness finding indicates that emotional restora-
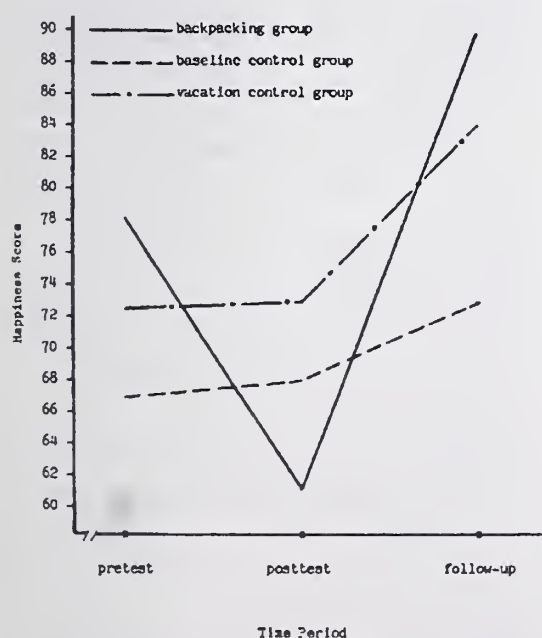

Figure 1.—Time-by-group interaction effects for overall happiness in Study 1.

tion is indeed a potential outcome of natural environment experiences.

Mental restoration.—An alpha level of .10 was used for hypothesis testing of behavioral effects, rather than the conventional .05 level. Given the exploratory nature of the research, it was thought that treatment effects might be weak, so the odds of discovering an effect were maximized. In addition, because the research would be carried out in naturalistic settings, numerous extraneous factors could not be controlled in the quasi-experimental design. The potentially large error variance would decrease the chance of discovering statistically significant effects.

The one-way analysis of variance test for the proofreading scores suggests no statistically significant differences between the groups at pretesting, $F(2, 65) = 1.78, p < .17$. At the posttest, however, the repeated measures analysis of covariance yields a statistically significant time-by-group interaction, $F(2, 65) = 2.39$, $p < .09$. Changes were in the expected directions; while both baseline and vacation control groups declined in their proofreading performance from pre- to posttesting, the backpacking group showed an increase in performance (fig. 2). Collapsing the vacation and baseline control groups, in the repeated measures analysis of variance, increases the power of the statistical test by reducing the variance attributable to control group differences. This version of the repeated measures analysis of covariance results in a statistically significant time-by-group interaction, $F(1, 48) = 3.85, p < .05$. These results suggest that the wilderness experience contributed to increased levels of attentiveness and concentration in the backpacking group as compared to the control groups.

In sum, the proofreading results corroborate the hypothesis of increased mental well-being as a result of a wilderness experience. That the proofreading measure is a behavioral index of mental well-being, and thus less amenable to change than self-report indices, makes the finding relatively more robust. Finally, the finding affirms the heuristic value of the restorative environment's theoretical framework by indicating that attentional factors are involved in restorative experiences.

The broader view of restoration assumed in this study—that restoration is a holistic phenomenon—also receives some reinforcement. The combined happiness and proofreading results suggest that restoration does, in fact, take place on more than one level, though not necessarily simultaneously. While it was assumed that restoration would also take place on physiological and spiritual levels, these aspects of restoration were not successfully measured. No effort was made to gather data on physiological restoration because of logistical considerations. Efforts were made to measure spiritual restoration, but the measure was flawed; for more details, see Mang (1984).

Although the first study constituted a significant improvement over other research in the area, it was not without weaknesses. Using only backpackers as participants addressed an important self-selection issue; however, it also limited the ability to generalize the findings. Also, the lack of indices of physiological restoration and the failure of the spiritual restoration measure prevented a complete survey of the breadth of restorative experiences.

Study 2

The second study was designed with three purposes in mind. First was replication of aspects of the initial study. This was manifested in the adoption of the same theoretical framework, in the selection of emotional and mental restoration measures, and in the use of naturalistic settings. A second guiding purpose was to address weaknesses in the earlier study. Toward this end a true experimental design was employed and physiological measures were included. Finally, the second study was specifically designed to provide a test of the theory of restorative environments. Two strategies were used to fulfill this purpose. Efforts were made to equalize participants with regard to level of cognitive fatigue. Also, participants were asked to evaluate the particular environment in terms of the theory of restorative environments, thus enabling examination of the relationship between restoration outcomes and participants' experiences of their respective environments.

Two predictions tested in the second study were:

1. Restoration as a result of an experience of a natural environment will take place to a greater extent than will restoration resulting from an experience of an urban environment or from a passive relaxation experience.

2. Degree of restoration will be correlated with evaluations of the particular environment in terms of the theory of restorative environments.
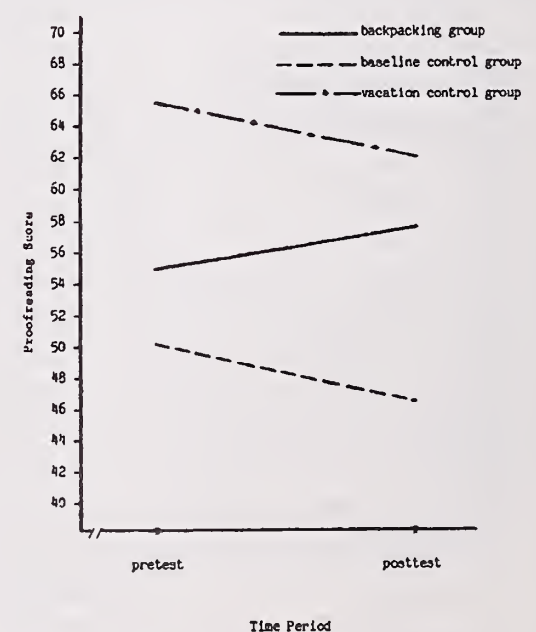

Figure 2.—Time-by-group interaction effects for proofreading performance in Study 1.

Method

Design.—Equal numbers of males and females were assigned at random to each of three conditions. The conditions were natural environment experience, urban environment experience, and passive relaxation experience. There were 34 participants in each group.

Participants.—The 102 college undergraduates who participated were recruited from two lower-division social ecology classes, Introduction to Human Behavior and Introduction to Environmental Analysis.

The typical participant was about 20 years old, from a middle class background, and about half-way through his or her undergraduate education. Although the majority of participants were Caucasian (64.7%), there were considerable percentages of Hispanic (10.8%) and Asian (16.7%) participants. Over 60% of the sample came from a home in which at least one of the parents had completed college.

Settings.—Data gathering was conducted on three different settings. For all participants, the first session was held in a laboratory on the Irvine campus. This was also the setting for the passive relaxation experience. Although the institutional nature of the place was rather apparent, efforts were made to make it less sterile. The room was furnished with a large and comfortable easy chair, a table, lamps, and magazines. A portable stereo made music available to those who wanted it.

A regional park in Orange County, California was the setting for the natural environment experience. The park contains riparian habitat, remnant chaparral and live oak communities, and a large number of exotics, such as orange trees and ornamentals. A diverse assortment of animal life either inhabits or migrates through the park; deer, rattlesnakes, lizards, and raptors were some of the animals sighted during the study. Large rock outcroppings and a small waterfall are other notable features. Participants walked with a researcher over a designated path through the park.

Though officially designated as a wilderness park, the park's proximity to a major metropolitan area is readily apparent. Residential development can be seen from a number of points within the park, as can large pylons supporting high-tension wires. The park is also near a flight path of a local airport. The sight and sound of planes was common.

Downtown Santa Ana, Calif., provided the setting for the urban environment experience. With a population in excess of 300,000, it is the largest city in Orange County. A large Hispanic community gives the city a distinctive cultural character; more than one participant reported the feeling of being in a foreign country.

The urban walk passed by small shops and businesses, restaurants, medical offices, a department store, and several churches. Several high-rise buildings are situated along the city's main street, which roughly bisected the area encompassed by the walk. Traffic in the area is fairly heavy during the day. There is an active street life. Street musicians, bars, and a theater are sources of entertainment in the area. For an urban environment, the area is relatively clean.

Dependent measures.—As in Study 1, the Zuckerman Inventory of Personal Reactions (ZIPERS) and the Overall Happiness scale (OHS) served as measures of emotional restoration. The time referent for the OHS was changed from a matter of days to a matter of hours, in keeping with the difference in the duration of the treatment.

Proofreading performance was again used to test for mental restoration. The materials and proofreading procedures used in Study 1 were also used in Study 2.

The present study added measures of physiological restoration, including systolic and diastolic blood pressure, heart rate, and skin conductance. The use of these measures was suggested by the work of Ulrich (1981, 1986).

The present study also obtained evaluations of the different experimental settings in terms of the restorative environments theory. This was accomplished through the Environmental Evaluation scale (EES), a 20-item scale that measures evaluations of being away, fascination, coherence, and compatibility. Items on complexity preference and comfortableness/naturalness are also included. The scale employs a Likert format to gauge responses to the items, which are statements about the environment. Examples are, "My attention was drawn to many interesting things," and "It would be difficult to find anything to do in such a place." At present, reliability and validity information for the EES are incomplete. However, the initial analysis indicates that the scale has high internal consistency, alpha = .92.

Apparatus.—Blood pressure and heart rate readings were obtained with a Critikon Dinamap Vital Signs Monitor Model 1846P.[2] Readings were taken once every 4 minutes.

Skin conductance was measured with a Psyonics AGSC Automatic Skin Conductance Recording Device through Beckman 16 millimeter silver-silver chloride standard skin electrodes. Johnson and Johnson K-Y Lubricating Jelly was used as a conductive medium. Skin conductance readings were taken every 64 seconds.

For all groups in the first session and for the passive relaxation group in the second session, the physiological recording equipment was situated in a room adjacent to the room in which participants were seated. At the urban and natural environment

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[2]*The use of trade and company names is for the benefit of the reader; such use does not constitute an official endorsement or approval of any service or product by the U.S. Department of Agriculture to the exclusion of others that may be suitable.*

field sites, the equipment was in the room where participants were seated, though not in their field of vision.

Procedure.—Each participant took part in two sessions. During the first, participants provided baseline values for the emotional, mental, and physiological measures. In the second session, participants performed a series of tasks designed to make heavy demands on their ability to concentrate. Performance of the tasks came immediately before administration of the treatment. There was a time lapse of 3 to 25 days between the two sessions; the median time lapse was 9 days.

On arrival for the first session, participants signed a consent form, then washed their hands in preparation for the attachment of the skin conductance electrodes. They were then seated in the easy chair. After cleaning the palm of their non-dominant hand with alcohol, the skin conductance electrodes were attached. The arm cuff for the vital signs monitor was attached to their dominant arm. Participants were then instructed to minimize movements that might affect their physiological measurements.

A 16-minute acclimation period preceded the actual baseline recording period. During this period, participants completed questionnaires on their general background, their physiological background, and on the kind of day they were having. Following these, they completed the ZIPERS and the OHS.

After the acclimation period, baseline physiological measures were recorded for a period of 20 minutes. Participants were left alone in the room during this period. They were told that they could read magazines if they wanted to, and, if desired, soft music was provided.

When the baseline recording period ended, the researcher returned to the room and removed the electrodes and arm cuff. Participants then completed the proofreading

task. Finally, they were scheduled for their second session.

The second session began much like the first. After preparing participants for the recording of physiological measurements, a 12-minute acclimation period began. During this period participants again completed questionnaires on their physiological background and the sort of day they were having. Those in the natural and urban environment conditions also completed a questionnaire on their drive to the field site. When the questionnaires had been completed and the acclimation period had passed, a second set of baseline physiological measurements was recorded. This was done over 20 minutes. Participants were allowed to read magazines during this period.

After this second set of baseline measures had been recorded, participants were told that they were going to perform a series of tasks designed to test their ability to concentrate. The tasks used were the Stroop Color-Word Interference Test and a binary classification task. The Stroop task used a poster with five columns and 20 rows of color names printed in a color other than the color named. Participants were presented with a set of row and column coordinates every 3 seconds. They were required to locate the appropriate color name and call out the color of the ink the word was printed in. The binary classification task required classification of numbers as even or odd and as high or low in relation to a given criterion number. Numbers were called out every 2 seconds. Participants were led through the tasks with an audio tape; this enabled a high degree of uniformity in presentation. To counter boredom and practice effects, the tasks were presented in the following repeating sequence: Stroop, binary classification, Stroop, binary classification. Each of the four task segments lasted approximately 6 minutes.

Participants were told that the person with the best overall perform-

ance on the experimental tasks would receive a reward of $50. This was done to keep them involved with the task; the difficulty of the tasks was such that there was concern that some participants would just give up.

It should be noted that, without exception, participants found the tasks extraordinarily demanding. Some reported feeling dizzy. Some had extreme emotional reactions, ranging from anger and frustration to tears. Some became intensely involved with the tasks, considering them as a challenge. All experienced some increase in their level of physiological arousal.

Upon completion of the task sequence, the arm cuff and electrodes were removed. In the passive relaxation condition participants were then left alone in the laboratory for 40 minutes, after being instructed that it was okay to read magazines and play music but not to fall asleep.

In the natural and urban environment experience conditions, participants were taken on a walk in their respective environment. The walks were of similar length, taking approximately 40 minutes to complete; however, the natural environment walk was over slightly hilly terrain, while the urban environment walk was over level ground. At the outset of the walk, participants were asked to relax and just be aware of the environment around them. They were assured that they did not need to pay attention to anything in particular, but that if they saw something they found particularly interesting, they should feel free to point it out. Researchers made efforts to keep conversation to a minimum without straining the situation.

When the treatment period ended, the arm cuff and electrodes were attached for the last time. A 32-minute physiological recording period then began. At the beginning of that period participants completed, in the following order, the EES, the ZIPERS, and the OHS. Before com-

pleting the scales, participants in the natural and urban environment groups were asked to imagine that they were still in the environment that they had just walked through. After completing the scales, participants in those two groups were once again asked to imagine themselves still in the setting. They were not allowed to read magazines.

When the 32 minutes had passed, the arm cuff and electrodes were removed. Participants then performed the proofreading task for 10 minutes. Upon completion of the proofreading task participants were debriefed.

Results and Discussion

To date, only preliminary analyses of a subset of the data have been completed. The findings presented here should, therefore, be considered tentative. For the sake of brevity, the only posttest comparisons reported will be those between the natural environment experience group and the urban environment experience group.

Analysis of variance tests were performed on the demographic and background variables that were available for analysis. The tests indi-

Figure 3.—Change in overall happiness as a function of experience of environment in Study 2.

cate that the groups were similar with respect to background characteristics of age, height, and weight. The groups were also similar in terms of ethnicity, parents' annual income, and highest level of education achieved by either parent.

The groups differed with regard to year in school, $F(2, 96) = 5.04$, $p < .008$. This probably reflects the fact that participants in the passive relaxation group (which had more lower-class persons) were recruited from one class, while participants in the other two groups were recruited from a different class.

Emotional restoration.—As in Study 1, the ZIPERS and OHS provided measures of emotional well-being. At present, only results from the OHS are available.

A one-way analysis of variance test was performed on the pretest OHS scores, resulting in $F(2, 96) = 1.49$, $p < .23$, indicating no statistically significant differences between the three groups at the pretest.

A planned comparison of the natural and urban groups' posttest scores was performed in an analysis of variance model. Because tests for homogeneity of variance indicated that the groups differed with respect to variance, the planned comparison employed separate estimates of variance rather than the pooled variance estimate. The planned comparison resulted in $t = 1.89$ at $df = 51.7$, $p < .032$. This suggests that the natural environment experience was associated with significantly higher levels of overall happiness at the posttest stage than was the urban environment experience (fig. 3).

The hypothesis that a natural environment experience will result in a greater degree of restoration than an urban environment experience receives support in the present study. That the emotional restoration findings of the first study have been reproduced under the more stringent experimental conditions should allay some of the concerns regarding the validity of the earlier findings.

Mental restoration.—Proofreading performance again provided a behavioral measure of mental well-being. Because a true experimental design was used in this study, the conventional .05 alpha level was used for hypothesis testing, rather than the .10 level used in Study 1.

An analysis of variance test of the pretest proofreading scores resulted in $F(2, 98) = 2.18$, $p < .12$. This suggests that, at the pretest, the participants in all three groups were comparable with regard to attentiveness and the ability to concentrate.

The planned comparison of the posttest proofreading scores from the natural and urban environment groups yielded $t = 1.22$ at $df = 98$, $p < .113$. Apparently, the natural environment experience did not positively influence attentiveness or the ability to concentrate in comparison to the urban environment experience.

The results of the present study do not corroborate the hypothesis of greater mental restoration resulting from a natural environment experience as compared to an urban environment experience. A plausible explanation for this finding centers on the strength of the treatment; the 40-minute treatment period may have been an inadequate amount of time for mental restoration to take place, no matter what the setting.

Physiological restoration.—Blood pressure and heart rate measures were used as measures of physiological well-being. It was expected that increased well-being would be reflected in lower blood pressure and heart rate.

Analysis of variance tests of the pretest physiological measures indicate that participants in the three groups are similar with respect to systolic blood pressure and heart rate. However, the groups differed on diastolic blood pressure: $F(2,99) = 4.46$, $p < .014$. Examination of the pretest means suggests that the passive relaxation group has a generally higher level of diastolic blood pressure at the pretest. This observation
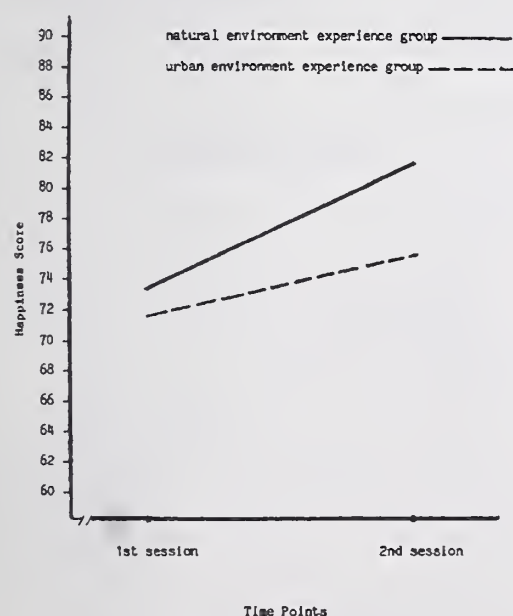
is born out by comparing the passive relaxation group's pretest mean with the pretest means of the other two groups. This contrast results in one-tailed $t = 2.94$ at df $= 99$, $p < .004$. Comparison of the pretest group means of the urban and natural groups does not result in a statistically significant difference.

Because there were no differences between the natural environment experience group and the urban environment experience group at the pretest, planned comparisons of their posttest group means were performed in an analysis of variance model. The comparison of the group means for systolic blood pressure resulted in $t = -.31$ at df $= 99$, $p < .38$; for diastolic blood pressure, $t = .45$ at df $= 99$, $p < .33$; for heart rate, $t = 1.10$ at df $= 98$, $p < .14$.

In sum, no statistically significant differences exist between the posttest physiological measures obtained from the natural environment experience group and those obtained from the urban environment experience group. This suggests that, in the present study, an experience of a natural environment did not affect physiological restoration to a significantly greater degree than did an urban environment experience.

There are two plausible explanations for non-reproduction of Ulrich's (1981, Ulrich and Simons 1986) findings and thus non-support of the physiological restoration hypothesis. First, as with mental restoration, the treatment may have been inadequate. Second, it is possible that any differences in physiological restoration from the tasks were washed out by the end of the treatment period, during which physiological measurements were not taken.

Environmental evaluation.—The EES items were recoded so that low values represented little agreement and high values represented high agreement with whatever statement was presented. An index variable was then created by summing the sources from the 20 items. A high score indicates that the participant rated the particular environment highly in terms of being away, fascination, coherence, and compatibility.

Two analyses were planned for the EES data. The first involved testing for a difference between the groups. A planned comparison indicated that evaluations of the natural environment experience ($M = 80.50$) were significantly higher than evaluations of the urban environment experience ($M = 66.20$), $t = 6.06$ at df $= 99$, $p < .000$. This suggests that participant experiences of the natural environment were characterized by being away, fascination, coherence, and compatibility to a greater extent than participant experiences of the urban environment.

The second analysis involved testing the hypothesis that degree of restoration would correlate with evaluations of the particular environment in terms of the theory of restorative environments. Preliminary analyses involved calculation of Pearson product-moment correlations between the EES index score and the various indicators of restoration. This produced statistically significant correlations with the posttest overall happiness ($r = .29$, $p < .001$) and proofreading ($r = .21$, $p < .018$) scores. The relationships are in the expected direction; as EES index scores increase, overall happiness and proofreading performance also increase.

The pattern of environmental evaluation results brings an interesting issue to the fore. Were the above hypothesis true, and the urban and natural environment experiences evaluated equally high, one would not expect clearcut differences between the groups in terms of restoration. The relationships between evaluation and the two restoration indices tend to support the hypothesis. The two environmental experiences were not evaluated equally high; however, there are clearcut differences between the two groups only in terms of overall happiness.

This suggests two possibilities. One, different factors in person-environment interactions more strongly influence different outcome measures. Two, evaluations of the environmental experience mediate outcomes, but to differing degrees. These possibilities will be examined in future analyses.

General Discussion

The present studies contribute to the body of wilderness research in four ways. First, the methodologies employed indicate ways to address problems that have rendered inconclusive much of the earlier work on wilderness therapy programs. Second, the combined results suggest that restoration resulting from natural environment experiences does take place on more than one level, supporting the assumption that restoration is a holistic phenomena. Third, they provide a test of a theoretical framework that allows wilderness experiences to be considered within the range of possible person-environment interactions. Finally, they provide a measure of support for this theory of restorative environments, thereby pointing out certain factors in the person-environment relationship that may operate to affect restoration.

Literature Cited

Campbell, A.; Converse, P. E.; Rodgers, W. L. 1976. The quality of American life. New York: Russell Sage Foundation.

Feingold, B. H. 1979. The wilderness experience: the interaction of person and environment. California School of Professional Psychology. Unpublished doctoral dissertation.

Gibson, P. M. 1979. Therapeutic aspects of wilderness programs: a comprehensive literature review. Therapeutic Recreation Journal. 13(2): 21-33.

Hanson, R. A. 1973. Outdoor challenge and mental health. Naturalist. 24: 26-30.

Hendee, J. C.; Catton, W. R., Jr.; Marlow, L. D.; Brockman, C. F. 1968. Wilderness users in the Pacific Northwest: their characteristics, values, and management preferences. Res. Pap. PNW-61. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station.

James, W. 1892. Psychology: the briefer course. New York, NY: Holt.

Kaplan, R. 1977. Some psychological benefits of an outdoor challenge program. Environment and Behavior. 6: 101-116.

Kaplan, R. 1977. Summer outdoor programs: their participants and their effects. In: Children, nature, and the urban environment: proceedings of a symposium; Upper Darby, PA. Gen. Tech. Rep. NE-30. Broomall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station: 175-179.

Kaplan, S. 1987. Mental fatigue and the designed environment. In: Harvey, J.; Henning, D., eds. Public environments. Washington, DC: Environmental Design Research Association.

Kaplan, S.; Talbot, J. F. 1983. Psychological benefits of a wilderness experience. In: Altman, I.; Wohlwill, J. F., eds. Behavior and the natural environment. New York, NY: Pelnum.

Mang, M. 1984. The restorative effects of wilderness backpacking. Irvine, CA: University of California. Unpublished doctoral dissertation.

Outings Sierra Club. 1983, January/February. The Sierra Club Bulletin. 68: 49-111.

Rossman, B. B.; Ulehla, Z. J. 1977. Psychological reward values associated with wilderness use: a functional-reinforcement approach. Environ. and Behavior. 9: 41-66.

Turner, A. L. 1976. The therapeutic value of nature. Journal of Operational Psychiatry. 7: 64-74.

Ulrich, R. S. 1979. Visual landscapes and psychological well-being. Landscape Research. 4(1): 17-23.

Ulrich, R. S. 1981. Natural versus urban scenes: some psychophysiological effects. Environment and Behavior. 13: 523-556.

Ulrich, R. S.; Simons, R. F. 1986. Recovery from stress during exposure to everyday outdoor environments. In: Barnes, R.; Zimring, C.; Wineman, J., eds. The costs of not knowing. Washington, DC: Environmental Design Research Association.

Wayburn, W. E. 1980. Psychological consequences of wilderness experiences. Irvine, CA: University of California. Unpublished master's thesis.

Winer, J. B. 1971. Statistical principles in experimental design, 2nd edition. New York, NY: McGraw-Hill.

Zuckerman, M. 1977. Development of a situation-specific trait-state test for the prediction and measurement of affective responses. Journal of Consulting and Clinical Psychology. 45: 513-523.

Acknowledgments

How Therapeutic is Camping for Mentally Ill Adults?

Lynn Levitt[1]

Abstract.—Although therapeutic camping for emotionally disturbed children and adolescents has existed for over a half century, most therapeutic camping programs for mentally ill adults evolved in the United States during the past 30 years. The purpose of this paper is to critically review the effectiveness of these camping programs as a treatment modality for mentally ill adults. In addition, suggestions for future research will be discussed.

Nature of Therapeutic Camping Programs

Although the term "therapeutic camping" is used to describe some programs designed for the mentally ill (Apter 1977, Muller 1971, Reitman and Pokorny 1974, Weisman et al. 1966), other terms such as wilderness camp/challenges (Banaka and Young 1985, Neffinger et al. 1984), sociotherapeutic camping (Ramsey 1969), camping therapy (Remar and Lowry 1974), psychiatric camping therapy (Lowry 1974), experiential therapeutic camping (Stich 1983, Stich and Senior 1984), wilderness therapy (Thomas 1981), or therapeutic community project (Peterson and Acuff 1955) have also been employed.[2]

Despite the differences in terminology, the goals of therapeutic camping programs are similar. They are designed to foster normal behavior patterns, emotions, and attitudes in mentally ill patients/clients through camping in some outdoor, nature setting.[3] Patients are encouraged to socially interact, participate in activities, be independent, show initiative, and make individual (and group) decisions. These behaviors are the exact opposite of passivity, dependence, and lack of initiative fostered by years of routine and regimentation in a hospital or institution (Bernstein 1972). Hopefully, therapeutic camping programs may aid in the discharge of the chronic mentally ill from hospitals and institutions into the community (Barker and Weisman 1966, Weisman et al. 1966).

Although therapeutic camping programs have basically similar goals, there are wide differences in the duration of the camping period, type of outdoor setting, the patients, and the staff who participate in these programs. While some programs are day camps (Bergan 1958, Lee 1983, Orbach 1966), most programs provide overnight experiences averaging approximately 1 to 2 weeks (Banaka and Young 1985, McFarland et al. 1967, Reitman and Pokorny 1974, Remar and Lowry 1974, Rerek 1973, Smith 1959, Weisman et al. 1966). However, some programs last only 1 to 2 days (Lowry 1974, Shearer 1975).

Usually mountainous, forested regions such as national forests, state parks, or forest preserves ranging from 1 to 300 miles from the hospital/institution are used (Ackerman et al. 1959, Bergan 1958, McDonald 1974, Neffinger et al. 1984, Reitman and Pokorny 1974, Shearer 1975, Tuttle et al. 1975). Typically, camping sites with developed facilities such as a dining hall or recreation building are chosen (Acuff 1961, McFarland et al. 1967, Ramsey 1969, Reitman and Pokorny 1974, Rerek 1973). Patients usually sleep in cabins with a staff member assigned to each cabin (Ackerman et al. 1959, Acuff 1961, Barker and Weisman 1966, Smith 1959, Weisman et al. 1966).

The patients differ in terms of the number participating, their ages, and diagnostic categories. The number of patients participating in these programs ranged from small groups of 7 or 9 patients (Kistler et al. 1977, Neffinger et al. 1984) to mid-sized groups of 20-50 patients (George and Gibson 1959, Orbach 1966, Tuttle et al. 1975, Weisman et al. 1966) to even larger groups of 80 to 114 patients (Peterson and Acuff 1955). Patient/staff ratios were approximately 1:1 (Jerstad and Stelzer 1973, McDonald 1974) or higher such as 3:1 or 5:1 (Neffinger et al. 1984, Peterson and Acuff 1955). Although most programs had mixed-sex groups of varied ages, a few programs were limited to only geriatric patients (Lee 1983, Rerek 1973). The mentally ill were usually selected from state mental institutions/hospitals (e.g., Rerek 1973), but others were selected from community mental health programs or private hospitals (e.g., George and Gibson 1959, Orbach 1966). While programs typically deal with a cross-section of the chronic mentally ill, many include mainly chronic schizophrenic populations (Acuff 1961, Banaka and Young 1985, Bergan 1958, George and Gibson 1959, Peterson and Acuff 1955, Whit-

[1] School of Humanities, New York Institute of Technology, Old Westbury, NY.

[2] The term "therapeutic camping" will be used to describe such programs in this paper.

[3] The term "patient" will be used rather than client in this paper to simplify matters.

tekin 1967) or schizophrenics in combination with some other diagnostic categories (McFarland et al. 1967, Shearer 1975).

Patients are selected primarily by the medical and clinical staffs involved (e.g., Lowry 1974, Orbach 1966, Ramsey 1969, Stich and Senior 1984), but the criteria for selection and/or elimination are less clear. In one camping program, patients were selected from older, working, chronic patients who deserved a vacation and had few or no visits from relatives or friends (Ackerman et al. 1959). Patients in another program were selected based on chronicity, adaptability, and demands of the program (Banaka and Young 1985). Some researchers included all type patients on such trips (Jerstad and Stelzer 1973); others eliminated those not able to care for their personal needs, those with some physical or medical impairment, or those that could possibly be behavior problems (Lee 1983, McNeil 1957, Ramsey 1969, Remar and Lowry 1974, Stich and Senior 1984, Weisman et al. 1966). Some of the diagnostic categories eliminated from past programs included acute psychosis or suicidal patients, chronic sociopaths, patients undergoing electroshock therapy, homicidal patients, paranoid patients, the brittle diabetic, the patient in delirium tremens, and the addict in active withdrawal (Lee 1983, Neffinger et al. 1984, Ramsey 1969, Remar and Lowry 1974, Stich and Senior 1984).

Patients are usually given the choice to participate or not in the camping program (Banaka and Young 1985, Jerstad and Stelzer 1973, Neffinger et al. 1984, Reitman and Pokorny 1974, Shearer 1975, Stich and Senior 1984). While most patients choose to participate, others decline (Banaka and Young 1985, McFarland et al. 1967, Stich and Senior 1984). In short, the patients who participate in the therapeutic camping programs are frequently a select group of volunteer patients.

The staff consists of a combination of professionals and nonprofessionals such as clinical psychologists, registered nurses, rehabilitation therapists, medical physicians, cooks, dieticians, and faculty at universities. Nurses or physicians are needed to dispense medications although dosages have been found to be reduced or eliminated during the camping period (Remar and Lowry 1974). Volunteer college students or professional guides are sometimes used (Banaka and Young 1985, Jerstad and Stelzer 1973), while ongoing camping programs often employ permanent staff (Ramsey 1969, Smith 1959). Although the importance of staff selection has been stressed (Smith 1959), only a handful of studies mention the criteria for selection. Neffinger et al. (1984) chose staff members who had extensive experience working with young adult chronic patients in therapy, significant backpacking experience, first-aid training, and who felt comfortable in informal or more formal relationship styles. Other researchers state that the staff must be motivated, enthusiastic, or show a genuine interest in the camping program (Lowry 1974, Ramsey 1969). Ramsey claims that younger personnel make better staff members. Some programs require their staff to attend workshops before the patients arrive to learn about group living in camp and about the facilities (Smith 1959).

Effects of Therapeutic Camping Programs

These studies indicate that therapeutic camping has several beneficial effects for mentally ill adults. Some of these major benefits include the following: (1) improved physical health (Caplan 1967, Reitman and Pokorny 1974); (2) improved patient-staff relationships (George and Gibson 1959, McFarland et al. 1967, Ramsey 1969, Reitman and Pokorny 1974, Rerek 1973, Smith 1959); (3) increased patient initiative (Weisman

et al. 1966); (4) restored sense of self including self-confidence and self-esteem (Lee 1983, McDonald 1974, Muller 1971, Weisman et al. 1966); (5) increased quantity and quality of social interactions (Banaka and Young 1985, Lowry 1974, Reitman and Pokorny 1974, Shearer 1975, Smith 1959, Tuttle et al. 1975); (6) establishment of friendships (Barker and Weisman 1966, Lee 1983, Remar and Lowry 1974), and (7) discharge from hospitals and a lower readmission rate (Acuff 1961, Barker and Weisman 1966, Jerstad and Stelzer 1973, Lowry 1974, Peterson and Acuff 1955, Rerek 1973, Weisman et al. 1966). Other effects include reduction in hallucinations (Shearer 1975), greater acceptance of reality (Whittekin 1967), improved skills (Banaka and Young 1985), improved table manners (McFarland et al. 1967), and increased patient enthusiasm and fun (Kistler et al. 1977, Neffinger et al. 1984, Reitman and Pokorny 1974, Whittekin 1967).

However, results of some studies indicate that therapeutic camping can also have negative effects for mentally ill adults including overt anger, passive-aggressive behavior, regressive behavior, depression, or suicide (McDonald 1974, Muller 1971, Orbach 1966, Shearer 1975).

While the results of a majority of these studies indicate that camping is indeed therapeutic for mentally ill adults, the validity of these results needs to be questioned due to weaknesses in experimental design and methodology.

Experimental Design and Methodology

Most of the results of therapeutic camping programs are based on either Campbell and Stanley's (1963) one-shot case study (Caplan 1967, George and Gibson 1959, Jerstad and Stelzer 1973, Kistler et al. 1977) or one group pretest-posttest design (Orbach 1966, Tuttle et al. 1975). In

the one-shot case study, patients participate in a therapeutic camping program and the effects of the program on the patients are recorded. In the one group pretest-posttest design, measures are taken on the patients before and after the therapeutic camping program and changes in their behaviors, emotions, and attitudes are recorded. However, the internal and external validity of these designs is weak.

The internal validity of these designs is weak because the treatment, therapeutic camping, may be confounded with other factors. If therapeutic camping programs lead to positive effects for mentally ill adults, one would presume that there is something inherently therapeutic about camping in a wilderness or wilderness-type setting. In fact wilderness has been viewed as therapeutic by several researchers because (1) it is isolated from the tensions and stresses of the city and institutional life (Acuff 1961, Apter 1977); (2) low density population, low levels of noise and movement, and a slow rate of change are particular wilderness stimuli (Bernstein 1972); (3) the natural environment has aesthetic and spiritual values (Acuff 1961); (4) it is a different, novel, and physically healthful environment (Neffinger et al. 1984, Thomas 1981); and (5) it reinforces activity, independence, and initiative (Bernstein 1972). Because of these inherent qualities of a wilderness setting, these authors state that it is easier for people to cope with their environment, learn new responses and skills, and be self-sufficient, independent, and active.

While the reported beneficial effects of therapeutic camping may be due to these inherent qualities of wilderness, without control or comparison groups, it is difficult to rule out other factors such as environmental change, increased perceived control, or "spontaneous remission."

With regard to environmental change, one has to ask, "what is changed?" Certainly the physical setting is different, not only in terms of flora and fauna, but there are also no wards with locked doors or window bars. Patients do not wear uniforms and are free to move about camp. More important, however, than the changes in physical setting are, perhaps, the changes in the daily routine and regiment found in hospitals and institutions. One major difference is that patient/staff relationships become more equal (Banaka and Young 1985, Remar and Lowry 1974, Smith 1959). Staff eat, share sleeping quarters, and participate in activities with the patients.

This changed patient/staff relationship has met favorably with the patients and been cited as the greatest advantage of the experience (Peterson and Acuff, 1955, Smith 1959). Thus the beneficial effects of therapeutic camping could be attributed to this marked change in patient/staff relationships rather than the claimed inherently therapeutic aspects of wilderness.

Therapeutic camping programs are also designed to increase a patient's control over his/her environment by having the patient make choices and decisions. This is the exact opposite of his/her life in a hospital or institution. Patients decide whether to participate in the program, help plan the trip and events, choose camp activities to participate in, plan the menu, prepare the food, etc. (Ackerman et al. 1959, McFarland et al. 1967, Peterson and Acuff 1955, Smith 1959, Whittekin 1967). Having the patients make choices and decisions are important factors in increasing one's control over his/her environment. Because it has been shown that increasing one's perceived control has led to beneficial effects in non-wilderness settings (e.g., Langer and Rodin 1976), the reported positive outcomes from therapeutic camping could be attributed to this factor alone rather than the inherent aspects of wilderness or camping in a wilderness setting. Although both environmental change and increased perceived control are aspects of the camping program, these factors are not dependent on wilderness or camping in wilderness to produce beneficial effects.

Finally another confounding factor is spontaneous remission (Campbell and Stanley 1963). That is, patients could have improved over time without any type of therapy. Although the duration of most camping programs were short and thus mitigate against this, without the use of control groups or comparison groups, this factor still cannot be ruled out. Very few studies have used either control or comparison groups (Banaka and Young 1985, Stich 1983).

Another problem with these research studies is the lack of reliable or valid measures used in assessing the effects of therapeutic camping. Results of these studies are usually based on anecdotal data and/or observational data (e.g., Caplan 1967, George and Gibson 1959, Jerstad and Stelzer 1973, Lowry 1974, Neffinger et al. 1984, Peterson and Acuff 1955, Smith 1959, Stich and Senior 1984). Most of these observations, however, suffer from possible biased reporting by the staff involved and lack of interrater reliability. Interrater reliability was rarely reported (Banaka and Young 1985, Orbach 1966). Instruments such as rating scales, Modified Bales Interaction Matrix, or questionnaires have been used in some studies (Banaka and Young 1985, Orbach 1966, Stich 1983, Tuttle et al. 1975). However these instruments suffer from lack of validity or reliability and/or biased samples. Only Orbach (1966) gave an estimate of reliability of the rating scales used.

Another difficulty is the lack of statistical analyses. Since parametric and nonparametric statistical tests were applied in only a handful of studies (Banaka and Young 1985, Orbach 1966, Tuttle et al. 1975), we do not know if the beneficial effects attributed to therapeutic camping programs were statistically significant.

The external validity of the designs is also weak. According to Campbell and Stanley (1963), "external validity asks the question of generalizability: To what populations, settings, treatment variables, and measurement variables can this effect be generalized?" (p. 5). It is difficult to generalize the results of these studies to other populations because of the small and/or biased samples or to other settings because of the lack of both short- and long-term follow-up studies. Only a few researchers did any type of follow-up studies (Banaka and Young 1985, Barker and Weisman 1966, Ramsey 1969).

Suggestions for the Future

If the therapeutic camping movement is to progress, we need not only improvements in experimental design and methodology but also research into as yet unanswered questions concerning these programs.

Improvement in the validity of these studies can be achieved through the use of control or comparison groups, randomization of subjects to experimental and control groups, larger samples, the use of reliable and valid measures, use of statistical analyses, and short- and long-term follow-up studies. The importance of control groups is indicated by the Banaka and Young (1985) study. In this study a variation of Campbell and Stanley's multiple time-series design was used. An experimental group of 48 patients were measured four times: before, during, at the end of the camping period, and 2-3 weeks later. A control group of 30 patients was measured before and during the camping period. Although the experimental group showed an increase in informal social contacts during the camping period, so did the control group. Without the control group, inaccurate conclusions might have been drawn.

Ideally, additional comparison groups should also be included in the experimental design to help determine exactly what is therapeutic about camping in a wilderness or wilderness-type setting. For example, one group of patients could participate in a traditional camping program in which patients are given increased control over their environment; a second group of patients could camp in the same setting but be given little control over their environment; a third group of patients could be brought to a non-wilderness setting (e.g., halfway house) and given increased control over their environment; while a fourth group of patients could be given no treatment and serve as the control group. By making various comparisons among these four groups, it could be determined if wilderness, perceived control, or both factors contribute to the therapeutic aspects of the camping program. While such a study would also not be without its faults, it would at least begin to shed some information on the therapeutic aspects of camping.

To reduce biases in observations, reliable and valid measures of behavior are needed. Ratings of the patients' behavior should be recorded by individuals other than the staff involved and interrater reliability reported (Banaka and Young 1985, McFarland et al. 1967).

More follow-up studies (both short- and long-term) are needed to determine how lasting the beneficial effects of therapeutic camping programs are and whether these effects generalize to other non-wilderness settings. To date, follow-up studies indicate that some of the beneficial effects resulting from therapeutic camping dissipate over time while others do not. Ramsey (1969) reported that ward physicians rated 75% of the patients as showing "some" to "excellent" improvement 1 month after the camping period. Banaka and Young (1985) reported that the experimental group improved on 7 of 10 scales by the end of camp but maintained those changes on only 4 of 7 scales 2-3 weeks later. For example, at the end of the camping period, experimental subjects indicated they were significantly more optimistic about the future, but this difference was not significant 2-3 weeks later. In a 6-month follow-up of these patients, Banaka and Young reported no significant differences in discharge rates (or recidivism) between experimental and control groups, but significantly more experimental than control subjects were in the community and spent more time there. Thus, certain effects of therapeutic camping appear to dissipate within 1 month while others appear more permanent. It is not clear whether this is due to elapsed time or the differences between wilderness and non-wilderness settings.

Normal behavior patterns expressed by the patients during camp may not generalize to non-wilderness settings because the shock of leaving a beautiful wilderness (or wilderness-type) setting to return to an institute or hospital may be too traumatic. To expect patients to transfer these behavior patterns from a wilderness to a hospital setting may be unrealistic. Therefore, to facilitate the transfer of normal behavior patterns in a wilderness or wilderness-type setting to non-wilderness settings, it has been suggested that clients practice the behavior patterns, thoughts, feelings, and perceptions first learned in wilderness in a number of environments leading gradually back to civilization (Thomas 1981). For example, nature settings closer to civilization such as city parks or hospital grounds might be used (Clark 1977). Clark cites a case in which the setting proved important. Increased communication among patients with poor socialization skills resulted on the grounds of a large metropolitan hospital rather than inside the hospital per se. To further reduce the differences between a beautiful wilderness setting and the typical hospital ward, the ward might also be changed. In one study the ward was redone in an

un-hospital-like appearance (along with changes in procedures) when patients returned from the camping trip. This program proved so successful that the several patients moved to community apartments (Rerek 1973). Increased postcamping efforts such as these may help to reduce the traumatic change from camp to ward setting, thereby facilitating the transfer of these positive effects to non-wilderness settings.

In addition to improving experimental design and methodology, we need answers to several questions concerning the operation of these camping programs. Systematic research into the role of therapeutic camping in the patient's treatment program, the type of patients and staff, the duration of the camping period, and cost/benefit analyses of these programs is needed. Although Gibson (1979) raised almost all these same issues nearly a decade ago, we still do not have any definitive answers to these questions. However, certain things can be gleaned from past studies that may prove useful to others planning to conduct research and/or develop therapeutic camping programs in the future.

First, what role does therapeutic camping play in the total treatment of the patient? Should it supplement or substitute for more traditional modes of therapy? Neffinger et al. (1984) claim that therapeutic camping should be adjunctive and not alternative therapy. In the past, therapeutic camping programs have served as a transition between hospital and community, as a type of aftercare service, as a vacation or recreational activity, as an opportunity for the patients to do something "normal," or as an extension of regular field trips (Ackerman et al. 1959, Kistler et al. 1977, Peterson and Acuff 1955, Reitman and Pokorny 1974, Rerek 1973). It is important to understand the role of camping programs in terms of treatment of the patient because the nature of the program itself may have to vary accordingly.

Second, we need information on whether therapeutic camping programs should be designed differently for patients with different diagnoses, ages, chronicity, etc. Remar and Lowry (1974) claim there should be three different type programs created—one for adolescents who require large muscle activity and need close supervision; one for chronic patients who need strong remotivation efforts to rouse them from withdrawal and stupor, and a third one for less disturbed patients already in a day care or rehabilitation sheltered workshop program. This scheme is based in part on the age of the patients. Although therapeutic camping programs are already designed roughly by age (i.e., for emotionally disturbed children, adolescents, and mentally ill adults), camping programs for mentally ill adults usually include a wide range of ages. For example, one program included patients ranging from 40-60 years (Weisman et al. 1966) and another from 19-62 years old (Tuttle et al. 1975). Since the special needs and capabilities of geriatric patients at camp have already been addressed (Lee 1983, Rerek 1973), further age subdivisions (e.g., young adult, middle age) may be necessary to design appropriate camp activities. Besides the criteria of age, therapeutic camping programs that have "normal" senior citizens interact with geriatric patients (Rerek 1973) or have patients interact with their relatives (Muller 1971) need to be further explored.

Third, the criteria for selection/ elimination of patients and staff is not clear. Although Smith (1959) claims that the selection of patients and staff is the most vital ingredient of the camping program, very few researchers indicate the criteria for selection of either. Although elimination of patients appears to be based on diagnostic categories, there is as yet no agreement on what categories to eliminate. Others feel that the evaluation of psychosocial dysfunc-

tion may be a more important determinant for participating in therapeutic camping programs than diagnostic category (Stich and Senior 1984). Ramsey (1969) states that the length of hospitalization seems to be related to therapeutic benefits because patients hospitalized for only 1-2 years respond best to therapeutic camping. It seems important to give patients the choice to participate in the program because this will increase their sense of control over their environment and possibly reduce any difficulties arising from forced compliance. However, if the patients decide not to participate in the camping program, their resistance can then be discussed in subsequent therapy meetings (Stich and Senior 1984).

Fourth, we need more information on the criteria for selection of staff, appropriate patient/staff ratios, the optimum staff-patient fit, and reactions of the staff to the camping program, etc. Although patients react positively to volunteers on the staff, hardly any programs use them (Reitman and Pokorny 1974, Remar and Lowry 1974). To date, a patient/staff ratio of 1:1 for adolescents and 3:1 for older chronic patients has been recommended (Remar and Lowry 1974). Moreover, more research regarding the reactions of the staff to the camping period is sorely needed. This is important since results of one study indicated considerable depressive letdown in the staff following a successful camping trip (Muller 1971). In addition, it has been recommended that each staff member be given a few hours relief each day because they are on-duty 24 hours a day during the camping period (McFarland et al. 1967).

Fifth, since certain negative effects have occurred for patients (and staff) participating in camping programs, preventative measures should be taken. A variety of workshops and preliminary meetings for the patients and staff before and after the experience has been recommended (Lee 1983, Muller 1971, Neffinger et al.

1984, Whittekin 1967). At these meetings it is important that the staff be made fully aware of adjustment or behavior problems of patients that could result in having them sent home from camp (Lowry 1974, Peterson and Acuff 1955, Ramsey 1969, Weisman et al. 1966). Patients may be initially reluctant, anxious, or apprehensive to leave the protection of the hospital; they may lack initiative, make unrealistic plans for specific activities, or withdraw from demanding or threatening activities (Kistler et al. 1977, Lee 1983, Shearer 1975). Muller (1971) suggests that patients not return from a camping program on a weekend if little therapeutic interaction is possible.

Sixth, what should the duration of the camping period be? Although past therapeutic camping programs for chronic mentally ill adults have lasted from 1-2 days to usually 1-2 weeks, this may not be enough time to change long ingrained behavior patterns found in mentally ill patients living in an institution or hospital. Turner (1976) suggested that a period of 2days is too short to break down years of stereotyped behavior roles much less build adaptive adequate behaviors and stated that the widespread depression following the camping period in the Muller (1971) study may have been due to this factor. Because some studies point to a direct relationship between the duration of the camping experience and positive changes in attitudes and behavior (Turner 1976), either the duration of the camping period could be extended or, perhaps, patients could repeat the camping experience. Only one program reviewed had patients repeat the camping experience, but most of the changes in the patients' behaviors were observed after the first camping period rather than subsequent ones (Orbach 1966).

Seventh, cost-benefit analyses of such programs need to be conducted and disseminated to other colleagues. Only a handful of researchers mention anything about the ac-

tual monetary costs of the program. Banaka and Young (1985) claim that their camping program was cost-effective when one compares the cost of 1 month in a hospital with the costs of camp. Six months after camp, the controls had accumulated hospital costs at twice the rate of participants. Stich (1983) stated that the patients who had participated in the Outward Bound Mental Health Program had shorter hospital stays which represented a substantial savings. To defray monetary costs, past programs have relied on monetary contributions and/or donations of goods and/or services from foundations, hospital volunteers, and professional associations; renting or borrowing equipment; having the patients share part of the expenses; using established camp facilities during off-season, or using free volunteers for the staff (Ackerman et al. 1959, Banaka and Young 1985, Bergan 1958, McDonald 1974, Reitman and Pokorny 1974, Remar and Lowry 1974, Rerek 1973, Smith 1959). Without ways to finance and/or reduce costs, even successful programs, unfortunately, may be forced to close (Remar and Lowry 1974). Detailed cost/benefit analyses of therapeutic camping programs may help to overcome any resistance from administrators and fiscal authorities (Barker and Weisman 1966) and allow program directors to argue convincingly for initial and continued financial support of these programs.

It is hoped that the issues and questions raised in this paper will promote systematic and scientific research that will lead to some general principles for the operation of therapeutic camping programs for mentally ill adults.

Literature Cited

Ackerman, O. R.; Mitsos, S. B.; Seymour, A. M. 1959. Patients go camping in Indiana. Mental Hospital. 10: 16-17.

Acuff, S. 1961. Camping: transition between hospital and home for the adult mentally ill. Journal of Health, Physical Education and Recreation. 32: 24-25.

Apter, S. J. 1977. Therapeutic camping: an alternative strategy for troubled children. Journal of Clinical Child Psychology. Winter: 73-75.

Banaka, W. H.; Young, D. W. 1985. Community coping skills enhanced by an adventure camp for adult chronic psychiatric patients. Hospital and Community Psychiatry. 36(6): 746-748.

Barker, B.; Weisman, M. 1966. Residential camping: imaginative program helps chronic mental patients. Journal of Rehabilitation. 32: 26-27.

Bergan, J. F. 1958. Day camp in Connecticut. Mental Hospital. 9: 12-13.

Bernstein, A. 1972. Wilderness as a therapeutic behavior setting. Therapeutic Recreation Journal. 6: 160-161.

Campbell, D. T.; Stanley, J. C. 1963. Experimental and quasi-experimental designs for research. Chicago: Rand McNally College Publishing Co.

Caplan, R. 1967. Tent treatment for the insane. Hospital and Community Psychiatry. 18: 145-146.

Clark, E. T. 1977. The outdoors as a therapeutic environment. The California State Psychologist. March, 9.

George, G. R.; Gibson, R. W. 1959. Patient-staff relationships change with environment. Mental Hospital. 10: 18-19.

Gibson, P. M. 1979. Therapeutic aspects of wilderness programs: a comprehensive literature review. Therapeutic Recreation Journal. 13: 21-33.

Jerstad, L.; Stelzer, J. 1973. Adventure experiences as treatment for residential mental patients. Therapeutic Recreation Journal. 7: 8-11.

Kistler, K. S.; Bryant, P. M.; Tucker, G. J. 1977. Outward Bound—providing a therapeutic experience for

troubled adolescents. Hospital and Community Psychiatry. 28(11): 807-812.

Langer, E. J.; Rodin, J. 1976. The effects of choice and enhanced personal responsibility for the aged: a field experiment in an institutional setting. Journal of Personality and Social Psychology. 34: 191-198.

Lee, J. A. 1983. The group: a chance at human connection for the mentally impaired older person. Social Work with Groups. 5(2): 43-55.

Lowry, T. P. 1974. Camping as a short-term private psychiatric hospital. In: Lowry, T. P., ed. Camping therapy: its uses in psychiatry and rehabilitation. Illinois: Charles C. Thomas.

McDonald, M. C. 1974. Adventure camping at Oregon State Hospital. In: Lowry, T. P., ed. Camping therapy: its uses in psychiatry and rehabilitation. Illinois: Charles C. Thomas.

McFarland, F.; Martin, R.; Williams, T. 1967. Staff attitudes and patient behavior on a camping trip. Hospital and Community Psychiatry. 18: 296-298.

McNeil, E. B. 1957. The background of therapeutic camping. Journal of Social Issues. 13: 3-14.

Muller, D. J. 1971. Post-camping depression: a lethal possibility. American Journal of Psychiatry. 128: 141-143.

Neffinger, J. W.; Schiff, J. W.; Abrams, S. 1984. The wilderness challenge: an adjunctive treatment. In: Pepper, B.; Rygiewicz, H., eds. Advances in treating the young adult chronic patient, new directions for Mental Health Services. No. 21, March. San Francisco: Jossey-Bass.

Orbach, C. E. 1966. Camping experiences for psychiatric patients. Journal of Psychiatric Nursing. 4: 571-585.

Peterson, B. F.; Acuff, S. H. 1955. An experiment in living. Mental Hospital. 6: 8-9.

Ramsey, G. B. 1969. Sociotherapeutic camping for the mentally ill. In:

Bindman, A. J.; Siegel, A. D., eds. Perspectives in community mental health. Chicago: Aldine.

Reitman, E. E.; Pokorny, A. D. 1974. Camping as a psychiatric day center. In: Lowry, T. P., ed. Camping therapy: its uses in psychiatry and rehabilitation. Illinois: Charles C. Thomas.

Remar, M. E.; Lowry, T. P. 1974. Camping therapy in the commonwealth of Massachusetts. In: Lowry, T. P., ed. Camping therapy: its uses in psychiatry and rehabilitation. Illinois: Charles C. Thomas.

Rerek, M. P. 1973. Senior citizen camping: an innovative program in community psychiatry. Journal of the Bronx State Hospital. 1: 85-87.

Shearer, R. 1975. Camping as a therapeutic experience for depressed and schizophrenic patients. Hospital and Community Psychiatry. 26: 494-497.

Smith, B. K. 1959. Patients go camping in Texas. Mental Hospital. 10: 16-17.

Stich, T. F. 1983. Experiential therapy. Journal of Experiential Education. Winter: 23-30.

Stich, T. F.; Senior, S. 1984. Adventure therapy: an innovative treatment for psychiatric patients. In: Pepper, B.; Rygiewicz, H., eds. Advances in treating the young adult chronic patient, new directions for Mental Health Services. No. 21, March. San Francisco: Jossey-Bass.

Thomas, J. C. 1981. Treed? Bushed? Stoned? Implications of cognitive psychology for wilderness therapy. Presented at the second annual convention of the wilderness psychology group; Missoula, MT.

Turner, A. L. 1976. The therapeutic value of nature. Journal of Operational Psychiatry. 7: 64-74.

Tuttle, L. P.; Terry, D.; Schinedling, M. M. 1975. Note on increase of social interaction of mental patients during a camping trip. Psychological Reports. 36: 77-78.

Weisman, M. N.; Mann, L.; Barker, B. W. 1966. Camping: an approach to releasing human potential in chronic mental patients. American Journal of Psychiatry. 123: 166-172.

Whittekin, R. G. 1967. Imaginative themes enliven day camp. Hospital and Community Psychiatry. 8: 237-238.

An Eighteen-Year Investigation of "Wilderness Therapy"

Robert Greenway[1]

Abstract.—The paper summarizes research aspects of an 18-year wilderness "growth program" taking place mostly within a university psychology department. It is based on data collected from over 600 participants out of the approximately 1,200 who have been through the program.

The roots of this particular approach were drawn from Peace Corps training projects with which the author was involved in the 1960's and began in earnest in 1969 within the university setting. Since that time, usually two or three 2-week wilderness field trips per year have been conducted, primarily with enrolled students who are psychology majors, but often including "outside" wilderness leaders interested in our particular approach. In addition, trips of 7-28 days have been conducted, some without food or equipment, and some with high-school students and with the general public. The trips are quite popular within the university setting; usually two to three times as many students as can be taken are turned down. Thus, there is a rigorous selection process.

The preparation period for participants lasts no less than 2 months, often 4 months, and sometimes as long as 6-8 months. Periodic meetings include information on equipment, diet, physical and psychological preparation, intensive group process, trial hikes, etc. Students may be rejected as "not sufficiently prepared" by the leaders. Most groups are 13-14 people, including two leaders, never more than 16, and sometimes as few as 10-12.

Trips consist of moving 12-20 miles into isolated and little-used wilderness areas, often overland,

away from trails, establishing base camps, undertaking structured activities of a ritual and psychological nature, preparing for and experiencing "alone time" (usually lasting 3 days and 3 nights), and then a "ritualized" return.

Equipment is very carefully attended to—it is assumed that the maximum safety for all weather conditions has been achieved. (Trips conducted in spring and fall almost always run into storms, often severe, including snow conditions.) Diet is carefully planned, restricted to "just enough," and controlled. Most personal items are not allowed, such as flashlights, paper, writing materials, toilet articles, etc.

Although most participants go on only one trip, approximately 10% continue on one or more additional trips, especially those "in training" to become wilderness leaders.

The trips are described as "psychological growth and exploration trips" and are seen by participants in a variety of ways: a chance to de-stress, to unwind, get clear, gain a new perspective, etc.; as a spiritual journey—a chance to reconnect, to heal, etc.; or social—a chance to get close to a group, to experience community, etc.; very few participants speak of learning *about* wilderness— it is taken for granted, or seen as a means to an end, reflecting the psychological bias (as opposed to biological or ecological) of this approach.

Objectives

From the beginning and ongoing, an attempt has been made to research this approach. Objectives have been to explore the psychology of the wilderness experience; to attempt to identify behaviors occurring naturally in wilderness settings that do not occur in other settings; to question the popular assumption that the wilderness experience is "healing," personally and socially beneficial, etc.; and to attempt a more informed perspective on contemporary civilization and current evolutionary path.

Methods

Over 600 detailed questionnaires have been collected and over 600 intensive interviews conducted. Over 50 "longitudinal" studies, some for as long as 14 years, have been conducted. Initial studies were comprised of the above, plus various preference scales, personality tests, and extensive background information.

Commencing 6 years ago, in addition to the above, more phenomenological and cognitive approaches were used, based in part on construct theory, cognitive mapping, semantic differential, etc. Coupled with this has been collections of stories and poetry in an attempt to explore the "cultural-mythological maps" that shape the construction of reality.

[1]Department of Psychology, Sonoma State University, Rohnert Park, CA.

Commencing 3 years ago, as the theoretical base evolved into recent work in transpersonal psychology, the attempt has been made to extrapolate from techniques used to assess meditation, drug, extreme athletic, yogic, and other so-called "altered states."

Results

Following is a sampling of some of the more notable findings from the research:

- Ninety percent of participants described increased sense of "aliveness," awakeness, well being, etc.

- Ninety percent described the breaking of an addiction (reduced to continuing freedom, 60% in longitudinal studies).

- Eighty-one percent described increased sense of empowerment.

- Eighty percent found the return initially joyful, but shortly (within several hours to 48 hours) fell into depression, sometimes severe.

- Seventy-seven percent described "major life changes" upon return—changes in personal relationships (change of partners, etc.), changes in employment or direction of life work, changes in housing or life style, changes in academic progress (mostly negative).

- Seventy percent of those tested for stress before and after (approximately 110 participants) showed an initial lowering of stress immediately upon return, then a rise of stress higher than before

the trip, with a gradual decline to about the pretrip rating.

- Women generally appeared to have a notably different wilderness experience than men.

- Many data on various aspects of the structure of the trips—effectiveness of preparation period, various structures utilized during trips, group relations, attitudes toward leaders and toward natural events. (Ninety-two percent cite "alone time" as the most important experience.)

- Many data correlating background factors—age, previous experience, spiritual practices, work, education, attitudes toward natural environments, etc., with apparent effects of the trips.

Discussion

That there is a perceived "experience of healing" there can be no doubt. But rather than the wilderness per se as a "healer," it is the combination of activities undertaken—ranging from selection, preparation, the building of assumptions about the trips, through the structured and non-structured activities—that provide the "growth" or "healing" experience. In other words, it is suggested that much the same benefits could occur outside the wilderness, even within buildings or urban situations (which premise the author has tested). Wilderness may be the most *efficient* context for such changes, but not the only possibility, and perhaps a possibility more difficult to integrate than other contexts.

Still, very profound cultural assumptions are made about the wil-

derness experience and the effect of these assumptions are little understood. The most vivid question that should be raised about this approach has to do with the disjunction between the wilderness and cultural contexts. It is this disjunction that calls into question the *long range* benefits of the wilderness experience. As opposed to most therapies, which basically facilitate adjustment to societal norms, wilderness therapy creates (or allows) changes and expectations that, more or less, are incompatible with today's societies, especially those less wealthy than America and western Europe.

There is a hunger existing in our culture that is fueling the tremendous interest in the wilderness experience. It is extremely important that we explore this hunger on its own ground, to look for solutions and healing within the culture, and to not presume that genuine healing can take place only within the tiny remnants of pristine nature left to us. We must avoid exploiting this hunger in order to create a profession based on unrevealed assumptions.

And we must avoid exploiting the wilderness itself. It appears doubtful that the remaining remnant can begin to support the breadth and depth of healing that is needed. If in fact our contemporary culture is pathogenic (the nature-consciousness duality is the paradigm example), the question is whether fundamental aspects of this pathology can be changed, as an obvious artifact might be changed. To advocate an onslaught of activity into the wilderness as the only or best or even most efficient ground for healing will not only serve to destroy the remaining wilderness, to flood it with the symbolism of duality, but will create an illusion that a temporary healing experience can change the immense, momentum-filled juggernaut of modern society.

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Reducing Levels of Trait Anxiety Through the Application of Wilderness-Based Activities

Alan Ewert[1]

Abstract.—This study assessed the effect of participation in an outdoor recreation program using wilderness-based activities such as rock-climbing and solo camping. Two groups (treatment and control) were compared using the State-Trait Anxiety Inventory developed by Spielberger et al. (1970). Using analysis of covariance to compare the pre, post, and 1-year follow-up scores, the group attending Outward Bound reported significant lower levels of Trait Anxiety than did the control group for the pre-post comparison.

The purpose of this study was to determine if participation in Outward Bound reduced individual levels of fear and anxiety. Within the context of this study, fear and anxiety were held to be synonymous (Levitt 1980:9) and referred to a complex set of emotional and/or physiological responses caused by the perception of some danger or threat. Levels of fear and anxiety (herein summed under the label of anxiety) were chosen as the dependent variable, because while much has been written about the positive effect programs such as Outward Bound have on self-concept and personal growth, to date there have been few studies done on the effect these programs have on anxiety levels.

The Concept of Anxiety

Anxiety is a complex set of behaviors, pattern of arousal, and cognitions which have evolved so as to optimize the survival potential of a large number of species, including man. Within a behavioral context, responses to fear have included: flight, fight, freeze (tonic immobility), and feigning death (Ratner 1975). These behaviors are usually accompanied by various patterns of activations of the neuro-endocrine and pe-

[1] USDA Forest Service, Pacific Southwest Forest and Range Experiment Station, Riverside, CA.

ripheral autonomic nervous systems (Gray 1974, Seyle 1950). As suggested by Mayes (1979), these responses may have evolved to increase an organism's capacity to respond effectively in a danger situation.

From the cognitive perspective, anxiety is considered both a learned response (Schachter and Singer 1962) and a powerful antecedent in determining what an individual will think and do (Izard and Tomkins 1966). Moreover, anxiety owes its existence to feelings of cognitive uncertainty concerning the exact nature of the danger, how the individual will react, and what will happen. A paradigmatic example of fear is provided by Kenny (1963) in which fearful circumstances (perceptions of danger or threat) produce symptoms of fear (e.g., elevated heart rate) followed by an action related to the object such as not enrolling in the program (behavior). It is at any one of these three points or a combination thereof from which a number of psychological approaches to reducing fear have evolved.

Currently, there is little consensus on what distinguishes emotional from non-emotional states and one emotion (e.g., fear) from another (e.g., excitement). James (1884) expressed the belief that we are afraid because of the perception feedback from physiological changes precipitated by an emotional stimulus. For example, according to this theory,

individuals feel fear because they can sense a faster heart beat or elevated breathing rate, hence their internal feedback system tells them they must be afraid (Mayes 1979). Added to by Lange (1885), the James-Lange theory of emotions has been influential in subsequent thinking about emotions such as fear. This theory states that emotions, such as fear, are really feedback from the autonomic-endocrinal responses by emotional stimuli. Different emotions can be distinguished by different patters of activation. While eliciting the same types of responses, fear feels different from anger, because it produces a different pattern of activation.

Later work by Schachter (1975) and Valins (1970) suggested that while the intensity of an emotion was determined by the physiological arousal, the particular emotion experienced was dependent on a cognitive context. In other words, a person could feel afraid, physiologically, and learn to be afraid, cognitively. Lazarus (1975) supported this contention by suggesting that a cognitive appraisal of a threatening situation lead to a physiological activation.

This fact has some implications for the outdoor therapeutic setting, since many outdoor recreation endeavors involve activities which can be fear-producing such as white-water canoeing, rock-climbing, or wilderness camping. Given the adventurous surroundings and obvious perceptions of danger, these activities could be

used to provide a fear-provoking but controlled environment.

Elaborating on previous findings, Gray (1974) has suggested that fear-provoking stimuli fall into one of four categories: intensity, novelty, special evolutionary dangers, and social interaction. While electrical shock using rats has been the most often studied modality (Mackintosh 1974) within outdoor recreation settings, intensity overload has been described by Csikszentmihalyi (1975). One interesting aspect of intensity is the fear-provoking nature of a lack of stimulation. Fear of darkness may be part of this lack of intensity phenomenon. Novelty has a fear-producing stimuli that can be divided into unfamiliar places or things, new objects in a familiar place, or a different procedure in a familiar place.

Berlyne (1960) reports that novelty frequently elicits exploratory behavior. This exploratory behavior, in turn, can result in greater knowledge and competence of the individual organism, a point which has some important ramifications for the therapeutic uses of adventure activities.

Special evolutionary dangers include particular situations which have proved to be hazardous in the past. Within the recreational setting, some of these hazards include: avalanches, fast or deep water, and falling. Interestingly, it is these special dangers which attract a growing number of recreational enthusiasts within the spectrum of Outdoor Adventure Recreation (Ewert 1985). A growing number of organizations involved in recreation and leisure services have incorporated ropes courses, mountain-climbing, and white-water activities as methods to help their participants develop skills, experience personal development, improve group interaction, and test themselves.

Social interaction, according to Hauck (1975), can lead to the most common types of fear, rejection, and failure. In a similar fashion, Epstein (1976) suggested that while fears in

animals are related to life and limb, people in contemporary society face fears primarily linked with threat to one's ego. In addition, Russell (1979) reported that interaction can also present sources of novelty both in terms of movement and recognition. More specifically, in the outdoor recreation setting, Ewert (1987) reported that these fears can be translated into operational concerns of: keeping others from reaching their objectives, not fitting in with the group, and not being recognized by the group.

The Acquisition and Reduction of Fear

A number of theories have emerged explaining how people acquire fear. Revolving around a "nature versus nurture" controversy, fear acquisition has been described as innate (inherited) fears supported by Hebb (1946) and Tinbergen (1951). In addition, becoming afraid has been considered a classical conditioned response/avoidance (Eysenck and Rachman 1965, Mowrer 1939, Watson 1924) in which an action leads to a frightening experience and, with enough reinforcement, is later avoided or viewed as dangerous. For example, people who experience a scare while in the water will often consider canoeing or rafting as a frightening activity.

Rachman (1977) suggests that informational and educational processes also contribute to fear acquisition. While this is not always effective, intuition and experience would suggest that such is often the case. The phrase, "Don't climb up there, you'll fall and get hurt," is but one example of this acquisition phenomenon in both nature (innate fear such as fear of snakes) and nurture (learning to fear social encounters).

Rachman (1974) suggests three clinical techniques used in reducing fear. These techniques include: systematic desensitization, flooding, and modeling. Systematic desensitization

involves a gradual exposure to a fearful situation in which the individual attempts to modify his or her cognitive, emotional reactions and physical responses. Flooding involves a prolonged exposure to a fearful situation through which the sensitivity to fear is dramatically blunted. Related to the previous methods is modeling. This technique involves the transmitting of new coping behaviors to the client via experiential learning and practice.

To a certain extent, all these therapeutic modalities utilize the proximity concept advocated by Carr (1979) and Seligman (1975). Proximity refers to spatial, temporal, or functional relationship. In other words, the closer a fear-producing object is in distance, time, or functionality, the greater the fear. While distance and time are self-explanatory, functionality refers to the relationship between an activity and an anticipated result. For example, rock-climbing elicits fear in many individuals because of the anticipated relationship between failing and unpleasant results. Therapeutically, the fear-reducing techniques previously mentioned use the concept of proximity to connect the client to the fear-provoking situation (systematic desensitization and flooding) and to break the condition-response cycle by demonstrating coping strategies (modeling) many of the more recent fear and stress reduction techniques utilize such as autogenic suggestion and progressive relaxation—facets of desensitizing, flooding, or modeling.

Underlying this study is the fact that these techniques are not only confined to the clinician's office, but are also used in a number of therapeutic outdoor programs such as Outward Bound. Although not given a technical nomenclature, desensitization, flooding, and modeling are often incorporated into program activities and used by instructor personnel as ways to enable students to overcome their fears and inhibitions in social and physical environments

(Ewert 1987). While these techniques have proven effective in a clinical setting, to date there is no evidence relating how effective these techniques are in an outdoor recreation setting. Despite the paucity of verified supporting data on fear reduction in an outdoor setting, many organizations promote their programs as opportunities to develop personal competence and, presumably, reduce fear.

Methodology

The Setting

Outward Bound is an outdoor recreation-based program specifically designed to promote personal growth and self-confidence. Developed in 1941, the Outward Bound concept has developed into 5 schools within the United States and over 30 schools worldwide. A commonality underlying all of these schools is the Outward Bound process. According to Walsh and Gollins (1975), the process consists of placing the learner into a unique social and physical setting. This often means small groups of people engaging in outdoor recreation activities such as river-rafting, canoeing, or mountain-climbing, often in wilderness areas. As part of a small group (5-10 people), the learner is then given a set of progressively more difficult tasks, such as wilderness navigation or solo activities. These activities are designed to promote self-confidence and feelings of personal efficacy. It is hoped that these newly-developed skills and attitudes will carry over to the learner's everyday life. Intrinsic to these benefits is the assumption that increasing self-confidence also reduces levels of various fears.

The Sample

During the summer of 1985, students from two Outward Bound schools (Colorado and North Caro-

lina Outward Bound) were queried. The study sample consisted of students who either participated in one of the two Outward Bound schools (Treatment Group) or registered for a course but did not complete or attend the course (Control Group). This process was utilized to achieve some similarity in terms of attitude or proclivity to attend an Outward Bound experience. Admittedly, the receptiveness toward participating in a program like Outward Bound creates external validity concerns since, quite possibly, other segments of a population universe may not be as inclined to participate or as receptive toward this type of programming for modifying levels of fear.

Instrument

To obtain a quantitative measurement representing a level of fear, a modified State-Trait Anxiety Inventory (STAI) was utilized. Originally constructed by Spielberger et al. (1970), the STAI was developed as a research instrument for investigating anxiety and fear phenomena in "normal" (non-psychiatrically disturbed) adults. The STAI has been useful with a variety of populations.

The STAI is comprised of two separate self-report scales for measuring two distinct anxiety concepts: state and trait anxieties. State anxiety refers to a condition of the individual which is characterized as a subjective, consciously perceived feeling of tension and apprehension which varies over time and circumstance. The state scale consists of 20 statements seeking information concerning how the individual generally feels at that particular moment.

The Trait Anxiety Scale consists of 20 statements which measure how a person generally feels. Trait Anxiety refers to a behavioral disposition toward anxiety which is relatively stable and not prone to extremes in deviation. As suggested by Campbell (1963), "acquired behavioral disposi-

tions" such as Trait Anxiety reflect an individual's past experience and are manifested by consistent responses toward particular objects or situations.

As reported in previous research (Crume and Ellis 1984, Ewert 1987), individuals in wilderness-based programs report a variety of fears and levels of fear. Since many of these fears are situational-dependent, such as fear of not keeping up with the group, they are appropriately defined as state anxieties. Because the purpose of this study was to ascertain the effect of participation in these types of programs upon the overall level of fear of the individual, the trait anxiety scale of the STAI was used.

Originally designed as a four-point Likert Scale, one modification was done on the instrument for this study. The four-point Likert format was replaced by a 10-cm line, anchored by the statements "strongly agree" and "strongly disagree." Participants were asked to place a slash (/) across the line in the area that best represented their feelings about a particular item. This format was chosen to provide a more precise measurement of each response (Fowler 1984).

To determine if any changes in levels of anxiety were actually observed, course instructors were asked via a similar questionnaire to rate their students as to types and levels of fear they had observed at course beginning and immediately after course ending. To avoid any interaction effect, the instructors did not see how their students rated themselves either before or after the course, and the students did not know the instructors were rating them. It was recognized that the instructors' ratings may be subject to bias in that the instructors may have a vested interest in showing that participation in Outward Bound reduces levels of fear. To offset this bias, the instructors' responses were anonymously recorded. To provide stan-

dardization definitions of fear and criteria for observation of fear, the course instructors were all briefed by the researcher just prior to the beginning of the course.

Results

Of the 550 individuals queried, 393 responded with usable questionnaires (response rate = 71%). Of this group, 352 individuals had completed their Outward Bound course (89%) and were considered the treatment group. Forty-one questionnaires (out of 73 total, 56%) were received from individuals who applied but did not attend or complete a course (10%). These individuals formed the nontreatment group. Of the total number of respondents, 239 were male (61%) and 154 were female (39%). The mean age of the respondents was 21.05 years.

Because levels of fear on the post and follow-up measures were considered partly a function of initial fear level as well as a function of the treatment effect, the analysis of covariance (ANCOVA) was considered the most appropriate statistical treatment for the control of the initial differences in levels of fear. As suggested by Wildt and Ahtola (1978), three assumptions were established prior to using an ANCOVA. All three assumptions were met with respect to homogeneity of variance (Bartlett-Box: $F = 1.56$, $p = .212$), homogeneity of regression ($F = 3.11$, $p = .080$), and linearity between the covariate and dependent variables (scatter diagram). A Chronbach's alpha of .78 was generated.

Having met the initial assumptions, a repeated measure of ANCOVA was conducted using the pre-course scores on the STAI (trait anxieties) as the covariate. The dependent variables were the post (immediately after the course ended) and follow-up (1 year after the ending of the course) scores. After equating both the treatment and nontreatment

groups on the pre-course anxiety scores, significant differences were generated on the post-course scores ($F = 7.75$, $df = 1/158$, $p = .006$). Significant differences were not noted on the 1-year follow-up scores ($F = .01$, $df = 1/158$, $p = .954$). The means and adjusted means on the generated scores are shown in table 1.

As table 1 indicates, the group that received the treatment (i.e., Outward Bound course) displayed significant reductions in the post-treatment scores when compared with the non-treatment group. One year after the

course ended, these differences were not statistically significant, although the levels of trait anxiety for the treatment group were still lower than the non-treatment group. A paired t-test on the treatment group indicated a significant reduction in the Trait Anxiety scores between the pre- and post-scores ($t = 3.47$, $p = .002$). This finding was corroborated by the behavioral observation scale distributed to the course instructors. Course instructors reported significant reductions in mean levels of anxiety of their students [pre-course

Table 1.—Repeated measures analysis of covariance using post and follow-up scores on levels of trait anxiety adjusted by initial scores.

Source	df	SS	F	p
Post				
Anxiety level	1	768.81	7.75	.006*
Pre-score	1	8,921.54	89.94	.000
Slope constant = .545				
Follow-up				
Anxiety level	1	.50	0.00	.954
Pre-score	1	7,035.99	47.25	.000

*Significant differences at .05 level.

Table 2.—Repeated measures analysis of covariance using post and follow-up scores with levels of gender, course type, and age on anxiety.

Source	df	SS	F	p
Post				
Gender	1	8.37	.08	.78
Type	1	61.91	.58	.45
Gender by type	1	91.56	.86	.36
Age	1	4.95	.05	.83
Gender by age	1	18.45	.17	.68
Type by age	1	258.22	2.43	.12
Gender by type by age	1	65.69	.62	.43
Follow-up				
Gender	1	38.99	.26	.61
Type	1	0.03	.00	.99
Gender by type	1	59.69	.40	.53
Age	1	439.01	2.96	.09
Gender by age	1	380.59	2.57	.11
Type by age	1	711.21	4.79	.03*
Gender by type by age	1	0.96	.00	.93

*Significant differences at .05 level.

= 47.62 (n = 90), immediately after the course = 37.71 (n = 53), t = 4.21, p = .000]. To determine whether gender, course length, or age had any effect on trait anxiety levels within the treatment group, a three-way ANCOVA was performed on the data. Course length was collapsed into categories: short course = 5-9 days, regular length courses = 15-24 days. Age was dichotomized into two categories: 15-20 years old and 21 or older.

When adjusted on the pre-course scores (covariate), no significant differences were noted for the variables of gender, course length, or age. A significant interaction effect of course length by age category was generated for the follow-up scores (F = 4.79, df = 1/126, p = .031). As seen in table 2, 1 year after the course end, it would appear that adult students who took a longer course reported less trait anxiety than adults who participated in a shorter course. With respect to the younger student, the reverse was true. Those individuals who took a longer course reported higher levels of trait anxiety 1 year after their Outward Bound experience, although this effect was minimal.

Discussion

The process used by Outward Bound and many other outdoor-related organizations places individuals in an often unique social and physical setting and places before them a series of physically and emotionally challenging tasks. These tasks are, in part, designed to create a sense of cognitive dissonance which, when resolved, results in feelings of personal competence and mastery. Drawing heavily on Bandura's (1977) model of self-efficacy, the individual is aided in developing these feelings of competence and mastery by personal accomplishment and involvement. It is this accomplishment and involvement that pro-

vides the underlying foundation through which an individual can change, both in attitude and behavior. In addition, this involvement through direct participation action and successful acquisition of a set of progressively more difficult goals can enhance the more traditional forms of fear therapy: desensitization, flooding, and modeling. Indeed, one does not have to observe an Outward Bound or similar program for long to realize that these clinical therapies are often utilized. The difference between the clinicians couch and outdoor program being one of setting and level of sophistication. Given this fact, the results of the study are not unexpected.

The results of this study are also suggestive of the thought that because of the direct involvement and behavioral action aspects of programs involving outdoor recreation activities, effective therapeutic methods of attitudinal and behavioral modification can be utilized. A note of caution, however, needs to be made at this point. Rachman (1974) reports that subjective reports of fear are often quite different than the observed physiological responses. Previous studies using written instruments or interviews have suggested that people will generally underestimate their level of courage. Conversely, their behaviors will generally indicate an underestimation of the level of fear they have for a particular activity or situation. Otherwise, individuals are more likely to say (either verbally or in writing) they are more afraid than they actually are and engage in activities in which they are more afraid than they actually appear. Consequently, a written instrument, including this one, may not be an accurate measure of the strength of the changes in levels of fear. Thomson (1979) suggests that the frequency and significance of an action may be a better indicator of emotional strength than an examination of inner feelings or physical responses. Also related to this issue is

the widely held knowledge that behaviors, beliefs, and attitudes are not always congruent or even complementary (Henerson et al. 1979).

In addition, one problem commonly faced in the behavioral sciences is also present in this study, namely the veracity of the measuring variables (i.e., the modified STAI scale) in correctly identifying the latent property (i.e., the construct of fear). According to Ratner (1975), the construct of fear is composed of four components—the subjective experience of fear, associated physiological changes, outward expressions of fear (e.g., talkativeness, inability to concentrate, etc.), and attempts to cope with or eliminate the source of the fear. To fully understand the effects of outdoor activities upon the levels of fear, a series of research efforts need to be conducted, each testing one or some combination of these components. This experiment addressed only the first—the subjective experience of fear.

As a final note, the findings of this study were not solely isolated to a tabulation on a computer printout. The participants (treatment group) of these courses were engaged in activities which demanded a high degree of physical and mental involvement. As previously indicated, this involvement can often manifest itself in feelings of competence and mastery. A substantial amount of previous research (Ewert 1983, Thomas 1985) has suggested that programs such as Outward Bound can act as catalysts for positive changes in both attitude and behavior. There are two points which have emerged from this study which have significance for future work in outdoor recreation social science research. First, as the data suggest, programs involving outdoor recreational activities such as rockclimbing may not only be useful in improving an individual's self-concept, but may also be valuable in reducing overall levels of trait fear and anxiety. In addition, it should be noted that in this case, as in many

others, the outdoor recreation setting may provide a more realistic study environment than the more traditional rat maze. If researchers are concerned with human interactions and behaviors, the recreation setting can often provide an arena in which people can readily be observed interacting with each other and the environment.

Literature Cited

Bandura A. 1977. Self efficacy: toward a unifying theory of behavioral change. Physiological Review. 84: 191-215.

Berlyne, D. 1960. Conflict, arousal and curiosity. New York, NY: McGraw-Hill.

Campbell, D. 1963. Social attitudes and other acquired behavioral dispositions. In: Koch, S., ed. Psychology: a study of a science. New York, NY: McGraw-Hill. 6: 94-172.

Carr, A. 1979. The psychopathology of fear. In: Sluckin, W., ed. Fear in animals and man. New York, NY: Van Nostrand Reinhold Company: 199-235.

Crume, C.; Ellis, G. 1984. Dimensions of wilderness anxieties of junior high school students. Paper presented at the National recreation and park association leisure research symposium.

Csikszentmihalyi, M. 1975. Beyond boredom. San Francisco, Jossey-Bass.

Epstein, S. 1976. Anxiety, arousal and the self-concept. In: Sarason, I.; Spielberger, C., eds. Stress and anxiety (vol. 3). Washington, DC: Hemisphere Publishing Company.

Ewert, A. 1983. Outdoor adventure and self-concept: a research analysis. Eugene, OR: Center for Leisure Studies, Univ. of Oregon.

Ewert, A. 1985. Riskrecreation: trends and issues. Trends. 22(3): 4–9.

Ewert, A. 1987. Fear and anxiety in environmental education programs. The Journal of Environmental Education. 18(1): 33-39.

Eysenck, H.; Rachman, S. 1965. The causes and cures of neurosis. London: Routledge and Kegan Paul.

Fowler, F. 1984. Survey research methods. Beverly Hills, CA: Sage Publications, Applied Social research Methods Series, Vol. 1.

Gray, J. 1974. The psychology of fear and stress. New York, NY: McGraw-Hill.

Hauck, P. 1975. Overcoming worry and fear. Philadelphia, PA: Westminster Press.

Hebb, D. 1946. On the nature of fear. Psychological Review. 53: 250-275.

Henerson, M.; Morris, L.; Fitz-Gibbon, C. 1979. How to measure attitudes. Beverly Hills, CA: Sage Publications.

Izard, C.; Thomkins, S. 1966. Affect and behavior: Anxiety as a negative affect. In: Spielberger, C., ed. Anxiety and behavior. New York: Academic Press.

James, W. 1884. What is emotion? Mind. 9: 188-205.

Kenny, A. 1963. Action, emotion and will. London: Routledge and Kegan Paul.

Lange, C. 1885. Om sindsbeaegelser, et psykofysiolgisk studie. Copenhagen: Kronar.

Lazarus, R. 1975. A cognitively oriented psychologist looks at biofeedback. American Psychologist. 30: 553-561.

Levitt, E. 1980. The psychology of anxiety. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Mackintosh, N. 1974. The psychology of animal learning. London: Academic Press.

Mayes, A. 1979. The physiology of fear and anxiety. In: Sluckin, W., ed. Fear in animals and man. New York, NY: Van Nostrand Reinhold Company: 24-55.

Mowrer, O. 1939. A stimulus-response analysis of anxiety and its role as a reinforcing agent. Psychological Review. 46: 553-564.

Rachman, S. 1974. The meanings of fear. Baltimore: Penguin Books, Inc.

Rachman, S. 1977. The conditioning theory of fear-acquisition: a critical

examination. Behavioral Research and Therapy. 15: 375-387.

Ratner, S. 1975. Animals' defenses: fighting in predator-prey relations. In: Pliner, P.; Krames, L.; Alloway, J., eds. Advances in the study of communication and affect, vol. 2: non-verbal communication of aggression. New York, NY: Plenum Press.

Russell, P. 1979. Fear-evoking stimuli. In: Sluckin, W., ed. Fear in animals and man. New York, NY: Van Nostrand Reinhold Company: 86-124.

Schachter, S. 1975. Cognition and peripheralist-centralist controversies in motivation and emotion. In: Gazzaniga, M.; Blakemore, C., eds. Handbook of psychobiology. New York, NY: Academic Press.

Schachter, S.; Singer, J. 1962. Cognitive social and physiological determinants of emotional state. Psychological Review 69:379-399.

Seligman, S. 1975. Helplessness: on depression, development and death. San Francisco, CA: Freeman.

Seyle, H. 1950. The physiology and pathology of exposure to stress. Montreal, Canada: ACTA, Inc.

Spielberger, C.; Gorsuch, R.; Lushene, R. 1970. STAI manual. Palo Alto, CA: Consulting Psychologists Press, Inc.

Thomas, S., comp. 1985. Adventure education: a bibliography. Amherst, NY: Institute on Classroom Management School Discipline, State University of New York at Buffalo.

Thomson, R. 1979. The concept of fear. In: Sluckin, W., ed. Fear in animals and man. New York, NY: Van Nostrand Reinhold Company: 1-23.

Tinbergen, N. 1951. The study of instinct. Oxford: Clarendon Press.

Valins, S. 1970. The perception and labeling of bodily changes as determinants of emotional behavior. In: Black, P., ed. Physiological correlates of emotion. New York, NY: Academic Press.

Walsh, V.; Gollins, G. 1975. The exploration of the Outward Bound process. Denver, CO: Colorado Outward Bound.

Watson, J. 1924. Psychology from the standpoint of a behavioralist, 2nd ed. Philadelphia, PA: Lippincott.

Wildt, A.; Ahtola, O. 1978. analysis of covariance. Beverly Hills, CA: Sage Publications.

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Wilderness Awakening: Probation Counseling and the Wilderness—A Dynamic Team

Robert C. Callahan, Jr.[1]

Abstract.—A wilderness probation program has tied court obligations of juvenile offenders to participation in wilderness activities, expeditions, and adventure-based family counseling, along with their parents, over a 6- to 9-month period. These dynamic intervention techniques Are designed to reach dysfunctional families, aggressive adolescents, sex offenders, and substance abusers. The program contributes to a significant decrease in criminal activity and an increase in self-esteem and school attendance for juvenile participants.

For the past 12 years the Virginia Beach Juvenile and Domestic Relations District Court has had a very innovative treatment program to refer clients of the probation department. This program is one of the very few forms of wilderness probation, where the client's court counselor and wilderness instructor is the same person. The client's progress in the program and its activities are directly related to their court obligations.

The program is year-round with three long-term groups of 10 clients and their parents. They are together for 6-9 months. They meet weekly in groups. The clients attend one wilderness outing a month and a 12-day expedition in the summer. Some do several long winter weekends in the cold months. The parent group goals are:

1. To learn that they are not alone.

2. Strengthen parent skills.

3. Build parent's self-esteem and confidence.

4. Learn how to work with the justice system.

5. Review and support program goals and objectives.

We do adventure-based family counseling in the outdoor setting. Parents review program activities

[1]Wilderness Therapy East, Virginia Beach, VA.

through slides, video tape, and interviews with kids.

The adolescent goals are:

1. Learn to be part of a group.

2. Learn coping and problem solving skills.

3. Learn wilderness skills to enhance personal life skills.

4. Learn trust of self and others.

5. Add structure to their lives.

The physical wilderness activities are:

Rock-climbing	Biking
Running	Caving
Canoeing	Day hikes
Cross-country skiing.	Service projects
	Sea Kayaking
Backpacking.	

Each activity has specific counseling objectives and is tied to the client's service plan, which is an action plan to deal with the client's counseling needs. Other types of evaluative information are:

1. During treatment phase, 84% decrease in criminal activities;

2. Decrease in absenteeism and negative remarks from school;

3. Positive self-image; increase in physical fitness;

4. General increase in family communication; and

5. Greater awareness of the wilderness.

The Virginia Department of Corrections has been very supportive of the use of Wilderness Outdoor Adventure programs in its Division of Youth Services. The Department helped found the Virginia Council of Outdoor Adventure Education. It has encouraged hard and soft skill training for Outdoor staff, sent staff to Outward Bound, and developed special training classes at its Academy for staff development. In 1985 it developed the State Wilderness Task Force. This task force developed standards and guidelines and twice presented a state-wide conference where additional hard and soft skills training has been provided. The Division of Youth Services, Department of Corrections now has a network of outdoor adventure programs ranging from local probation departments, group homes, less secure detention centers, special placement facilities, to State Learning Centers.

The use of Wilderness Adventure Programs in the Virginia Department of Corrections began back in 1974. At that time there were two probation departments (Norfolk and Virginia Beach, Va.) that started similar programs. This paper is about one of those programs, the Sierra II Wilderness Adventure Program of the Vir-

ginia Beach Juvenile Court Service Unit. This program was an attempt to reach dysfunctional families, aggressive adolescents, sex offenders and substance abusers. It was this author's opinion that traditional methods of probation just did not work. There needed to be a more dynamic, all encompassing and exciting way to intervene in people's lives. This "dynamic" intervention was also necessary because:

1. The court forced this new life situation upon them because of a family member's actions.

2. There may have been some criminal involvement by clients.

3. Many had deep emotional problems.

4. Parents were at the "end of their rope."

5. Everyone's level of resistance was strong.

6. Domestic and marital problems were high.

It seemed clients came to the probation department with a "stacked deck" already set up for failure.

The wilderness has a way to soothe the ruffled feathers of both adult and adolescent clients. It is such a unique world in the Criminal Justice system. It lets clients know we have something special to offer. Most everyone likes or supports the outdoors, loves the mountains, likes to fish, hike, or canoe. When the client and his family hear a Judge agree to a referral to the Wilderness program, most all are willing to "take a chance" on this new idea. This program has several advantages over traditional probation. Some are:

1. It brings together parents with common problems.

2. It creates a long-term community of those parents who in turn become a support group for its members.

3. This allows for a much broader scope of skills and resources for other clients and families as compared to the traditional one-to-one population.

4. It allows adolescents to see their parents working for a common goal.

5. It gives parents a chance to take care of themselves as well as family. Most of all they see their work guiding the criminal justice system.

The basic idea of our program is simple. We take 10 clients and their families into two separate groups that meet twice each month for 6-9 months. The wilderness setting and outdoor activities are used to "stir them up" inside, to examine their physical and psychological limits, to learn problem solving and coping skills, then test them as a group in the wilderness.

We take those lessons of life and apply them to "real life" situations specific to each client. All our outdoor activities are tools to open doors of growth for our clients. Our outdoor activities are:

Rock-climbing	Service projects
Canoeing	Family outings
Backpacking	Family picnics
Bike touring	Joint parent/
Caving	adolescent
Cross-country	groups
skiing	Running

Program Methodology

In March of 1985, the Program and this author celebrated 10 years of professional and personal growth. It is actually the 10th anniversary of the Sierra II Wilderness Adventure Program. The program has touched over 500 people in those 10 years. It seems appropriate at this time to look at this milestone as a point of self-evaluation. What has become of that man and his ideas; what about the program, its treatment methods, program activities, and staff? Most of all, does it work? What are some of the effects on clients and families of the Juvenile Court?

The program has grown from a one-man-show to the present staff level of 17—3 paid staff and 14 consultants. Our consultants are volunteers; some of the most dedicated volunteers in the Juvenile Court. They attend counseling training, wilderness activity training, rescue, and first-aid training. Our consultants are not paid a fee for their involvement in the program, although the program does spend money on their training, transportation, and subsistence. The subsistence is basically the same as for our adolescent clients—your basic outdoor camping food, your clean sleeping bag, and tarp to sleep under. These volunteers have given thousands of hours of time over the last few years alone. One of the biggest attractions for volunteers is that our adolescent clients can see that these folks are doing something for them, not because they are being paid but because they want to. It helps us deal with family crises, parenting problems, and relationship struggles. In the beginning, groups were open-ended as was the term of probation. The groups grew from 10 to 30 members. There were no parent groups, and outings were not very frequent. Volunteers were not steady or trained as they are today. One could say that the growth of the volunteer base and more secure funding has helped the program to evolve to a more structured and sophisticated treatment modality.

Today the adolescent client groups are no larger than 11. We have up to three per year. Those groups do not mix with each other. They have twice monthly adolescent group meetings. They attend weekend outings once a month and attend a 12-day primitive

expedition in the summer. Sometimes a group will cover the winter months and spend long trips over the holidays. We also have parent group meetings which meet twice a month. We find great support within the parents for these parent groups. It gives them chances to work with other parents, they see they are not alone, and they get to see how other folks deal with similar problems. Long-term change is more likely if the parents are involved, and through the parent group we get the entire family involved in the growth process. Some objectives for both groups are:

1. to educate all on the legal relationship of the Wilderness Program and the Court and to help explain what Wilderness probation is.

2. to deal with dynamic interventions in folks' lives through group process, both adolescent and parent group process modality.

3. to develop trust between the Wilderness staff and our clients.

4. to become a dynamic force in order to improve life styles, behaviors, and attitudes.

5. to give clients and parents something exciting to look forward to down the road.

There are several goals that the adolescent group is involved with. Some of those are:

1. to learn to feel comfortable as a member of a group.

2. to learn some techniques to deal with groups; this is one of the Sierra tools to help teach our clients ways to deal with peer pressure back out on the street.

3. to learn some Wilderness skills activities; this is done with a hands-on method, that is, learning by doing.

4. to help some of our adolescent clients learn of life-long leisure pursuits in hopes of filling some of their free time in productive ways.

Another technique that has proven very effective is the ability to take the adolescent client out of the family setting and out of his community setting for these wilderness outings. This is a period of time-out, not only for the client but for the parent. There have been many times when family dysfunction and crises were avoided, prevented, or resolved because the Sierra program had the ability to take adolescents out of the home for short periods of time. When the adolescent is taken out of the home, it is not just for vacation or recreation.

The following are examples of goals for 12-day expeditions. All clients reach this 12-day expedition with some kind of prior training, be it in a group setting, at the ropes course, or small weekend expeditions prior to this long-term outing. All the logistics are planned prior to these outings with great input from the adolescent clients. As the planning process becomes more complex and more sophisticated, the parents learn ways to supplement the planning process. Still, the goal is learning by doing. Also working together, planning, foresight, team work, and patience are tested as adolescents begin to plan the process. It is quite simple in the end: if you forget it, you don't have it; if you argue or fight, it is never solved. Another goal of long-term outings is to test the physical and psychological limits of our clients. We tell them that sometimes you must go the extra yard to solve problems at home or school. When we push those physical and psychological limits out in the field, in the wilderness, we relate to them

how that same effort can be used back home or at school.

The typical 12-day Wilderness Expedition would start with a 2- or 3-day backpacking trip. The staff would look for a rugged terrain or a long distance. During this backpacking trip, the group members would be responsible for determining how far they went, what direction they went by using a map and compass, and other techniques. They would carry in all their gear, supplies, and food and share the chores. The next 2 or 3 days involved a long-distance river trip. The clients would have to learn some canoeing skills and some cooperation skills by being able to work with another group member in their canoe. They would have to tie their gear and food inside the canoe. Other factors would become involved at this stage of the game; the weather, how well they have been working together as a team, how well each individual member has helped and supported the group, and how much direct or indirect guidance has been given by the staff.

The next 3 days involved the climbs in our rock-climbing program. At this stage of the program our clients found themselves in the middle of Monongahela National Forest in West Virginia. We tried to maintain some distance from civilization. The rock-climbing program starts off with basic mountaineering techniques and easy climbs, proceeds to an introduction to multi-pitch climbing, and eventually leads to a summit assault of Seneca Rocks. The summit assault involves all-day climbing together as a team to reach the top of a 1,000-foot vertical cliff.

Talking about your fears is one thing, living and learning with your fears is another. Certain staff members become technicians to make sure it is safe, other staff members are counselors to deal with the reasons why we are climbing. During an intense, long expedition, staff reserve at least 1 day as a student day to allow the students to reflect on things

they have done, try something again that they have really enjoyed, or just relax. After the student day, it is typical of the program to do a caving day. We take our clients into wild non-commercial caves and study not only the cave's ecology but experience total darkness during our exploration of the wild cave.

On the very last day of all major expeditions, we do a mountain marathon with our clients. This mountain marathon is 12 miles or greater in length. Our clients are no strangers to running with us, as they have been running all during their involvement in the program. This mountain marathon is done in the back countries of West Virginia or western Virginia. The goal is not competition with each other but competition with yourself. Simply stated, the goal is to reach the other end. The only major rule is that you get there on your own power, that you do not hitchhike.

All along the route staff are there with water and first-aid supplies. A staff person drives a van up and down the course and other staff members run with the kids. Most kids find the 12-mile mountain marathon is a bigger challenge than the things they have done previously. At the end of the mountain marathon, the staff provide a brunch for all the clients. Up to this date they had been eating camp food, freeze dried food, and whole food.

On this day, we cook them up a traditional meal. After the meal we debrief the past 12 days and the mountain marathon and prepare our clients to return home. We discuss several things, some are:

1. returning to your family;

2. returning to your peer group;

3. how to explain your feelings and experiences of this expedition; and

4. most important of all, how to use those gains to make your life more effective at home, in school, with your friends, and on probation.

Counseling System

The major treatment method in group process is reality therapy and experiential education—learning by doing with natural and logical consequences for all actions and behavior. This requires a great deal of process observation by counselors and staff; frequent group meetings and individual sessions, especially while in the wilderness. Both the adolescent group and parent group spend a great deal of time discussing parent/child problems, drugs, motivation, peers, school, and the pressure of growing up in the community.

After a major trip we discuss with the parent group the specific counseling goals and objectives that we had for all the wilderness activities. We use video tapes and slides to reinforce coping skills, brainstorming, and problem solving that could be used by the client and his parents to deal with similar issues at home or school. Does this innovative treatment work? In my opinion, it has strong and long-term effects on those who "see the light." Even for those folks who do not "see the light," there are dynamic interventions in their life that we feel surface later on as they mature.

Many of our former Sierra II clients have graduated from high school and college. Several have made the military their career, some become managers in business, others have their own families, and we feel they are better parents because of their involvement. We have had several evaluations of this program over the many years. A recent Ph.D. candidate from the University of Virginia, learned several things doing her evaluation. A few points from her evaluation are (Weeks 1984, University of Virginia):

1. During the treatment phase of the Sierra program, there is an 84% decrease in criminal activity.

2. That there is significant increase in self-esteem and increase in school attendance.

3. That there is a significant decline in negative remarks by teachers, those remarks range from inattentiveness, to not being prepared for class, to not working up to potential.

Other areas of improvement while involved in the Sierra Wilderness program are increased physical fitness, better self-esteem, and improved levels of control.

One of the keys to the success of this program is the parent group. Nothing is more exciting than motivated, caring, loving, and supportive parents. The new energy and life of parents really fire up their kids. The supportive parent really increases the long term survival of any behavioral and attitudinal changes. We have learned that the parents enjoy sharing their experience and maturity, and their different methods of resolving family and adolescent struggles. The parents also have time to relax, time not to worry about their kids, and have time to spend talking about those issues and problems that they feel are important. We also encourage them to take care of themselves, take some time for husband and wife.

The use of innovative and creative family counseling with the wilderness is another asset of wilderness probation. Families have to depend on each other to get chores done, to make a fire, to cook, and clean up. It strips folks of complex relationships created by society. It gives families time to look at each other, to talk, and observe. It also creates its own special environment. It gets dark when it gets dark. If it rains you get wet unless you are prepared. You

just cannot go to the refrigerator in the middle of the night. You do not have running water or toilets. In some ways it may heighten anxieties and frustrations, in other ways it makes life very simple. They can see each other succeed at something, to need each other, to have time for each other.

One major key to our program is the frequent meetings with all concerned. Not only are there group meetings of parents and adolescents, but there are meetings in the office and homes for individual meetings. There are group meetings in the field, there are field trips to prisons and parks, schools, and visits to the United States Navy. We encourage involvement of other "significant" others in the child's life, be it grandparents, aunts, uncles, or next door neighbor. We have even had involved employers of our clients come to meetings and graduations.

Growth of Staff

What of our young Director, now 12 years wiser? Our young Director has come a very long way, having reached several major life goals in that 12 years. One most obviously is the attainment of the Sierra II Wilderness Adventure Program as an integrated part of the Juvenile Court Service Unit, making it a legal form of wilderness probation. From something that was offered to selected members of his caseload back in 1974 to a full-time, year-round treatment program of today.

Our young Director was once the Virginia State Juvenile Officer of the Year and in that same year attended the International Wilderness Leadership School of South Africa on scholarship because of the work and involvement he had done with Sierra II. And finally, in 1982 our young Director received an award from the United States Department of Justice, Office of Juvenile Justice and Delinquency Prevention, for outstanding

contributions to the Juvenile Criminal System.

Although it took many years, it does seem that the hard work paid. The past 12 years have been an experience that has molded our young Director. A maturing growth occurred that was again focused on the Sierra II program. He learned to challenge the physical and psychological limits of the youth, to give time for self-evaluation, and to offer others a look inside themselves for happiness.

There is a special part of our program that we call an "indabba," an African word that basically means all become one. It reminds the young man of the encounters that he so vividly lived while in South Africa. The "indabba" is our group meeting in the field. These are meetings that are called by staff or clients and are used to discuss, confer, praise, confront, and plan our days in the field. Our young Director has learned a great deal about himself and his profession. He learned that his clients look to him for guidance, structure, firmness, consistency, honesty, and caring. He learned never to give up, to be strong but caring in making those life decisions. Our young Director developed his program so that the use of high-risk activities can be used to challenge the client's physical and psychological limits.

Those high-risk activities of rock-climbing, white-water canoeing, caving, and mountain marathons have also challenged our young Director's limits. He learned he enjoyed reaching for limits, especially in a safe setting (like being belayed at 1,000 feet on a hard climbing route). He soon learned that challenge gives him strength and patience at the same time. It seems when you prove to yourself that you "can do," you do not have to keep proving yourself to others. Our young man found an inner peace and strength he had known before. This helped him do his job more professionally. He soon saw how the same situations could help adolescents.

Another feeling our young man soon learned, and one that he taught his adolescent clients, was "I'm special, with special skills and experiences. I feel good about myself." Soon our clients felt better about themselves. Our clients began to feel closer to staff and a special kind of trust, compassion, and communication soon developed in this small wilderness group we were developing. This soon leads to a renewed source of self-confidence and self-discovery; one that stands up in the face of adversity. That kind of self-confidence and self-discovery is one of the gifts that the wilderness has to offer.

Our young Director has learned that he is capable of doing more than he ever dreamed—that psychological limits are set too low and that those psychological limits greatly affect the physical efforts. Nowhere is it more obvious to our young man than the marathons and triathalons that he has finished. Like the wall one reaches in marathoning when there seems to be no more energy left in your body and you still have 6 miles to go, do you give up? Not our young Director.

Running has become a way of life for our young man. It is a way to deal with frustrations and anger. It is something exciting to look forward to. It is a way to have time alone with yourself to mill over and process matters back at home or at work that you do not seem to have time for anyplace else. Experience and maturity that grows from real living is the best. How do I know our young Director never gave up? I know because I am that young Director. Twelve years wiser and 12 years more grateful for the gift of the wilderness and the opportunity to present that wilderness to the parents and children of Virginia Beach Juvenile and Domestic Relations District Court.

On May 1, 1987, after 12 years of services to the Virginia State Department of Corrections and the Virginia Beach Juvenile Court Services Unit,

this author resigned. The author is now the Executive Director of Wilderness Therapy EAST (Experiential Adventure Success Training). This new company is located in Virginia Beach, Va. The goal of this new business is to serve the general public and community, service organizations, human service agencies, the military, and corporations with that gift of the wilderness in a similar way as I have for the past 12 years. Now it does not have to be limited to the Court but to anyone ready to look inside themselves.

The American Wilderness—A Cultural Imperative

W. F. LaPage and S. R. Ranney[1]

Abstract.—Both the productive and cultural sides of American life owe their richness to the land and the landscape. The creative and inspirational character of the land, such as its wildness, vastness, and productivity, contribute to the spirit of America and find lasting expression through art, music and, literature. Collectively, these expressions have evolved into a uniquely American culture; that culture contributes to an infectious national spirit of pride and optimism. This intangible, and quite likely nonrenewable, national resource of the land can only be preserved when we understand the magnitude of its contribution. Through an examination of the sources of our national identity, the authors suggest that wildland preservation is a cultural imperative—a source of national vitality and energy.

Land and People

There exists, by common belief, something more to America than land and people, symbols and documents, heritage and pride, economic prowess, technical achievements, and international presence. It is that indefinable national attitude and outlook on life that is distinctly American. It is called the "American Spirit," and it finds expression in many ways. In reality it is the patriotic glue that holds the many ideologies and idiosyncrasies of America together.

One theory regarding the source of this spirit is it is the evolutionary steam that resulted from the slow melting of an eclectic pot of many nationalities. However, when the American spirit and national character are examined more closely, one of the most powerful sources of the country's essential cultural fiber is clearly the land; its economic opportunity, its challenges, and its creative inspiration.

It has also been suggested this uniquely American culture and spirit grew from new roots that were spliced from the old to grow fresh and vigorous. The old roots had been severed for most; traumatically cauterized for many. It can be theorized the roots of the new nation and its people came from the forests and rivers, the deserts and mountains, and the challenges and inspirations they

[1]New Hampshire State Parks; American Wilderness Alliance, Washington, D.C..

presented, not the ruins of ancient civilizations most other cultures look to for ancestral continuity. Thus, a different attitude and identity bloomed.

Our profound influence on "the land" is unmistakable, particularly when flying over it. The indelible imprint we have made on the face of America's landscape should leave little doubt that it also molded us as we changed it. Even from 30,000 feet, the impressions of abundance, opportunity, and productivity are unmistakable. The patterns of agriculture, transportation, energy development, transmission, and recreation can be read by a child. To the trained eye, our dependence on the land becomes obvious; as does the realization that no aspect of our history, culture, work or play, religion, or creative expression could have escaped the influence of such a diverse geography.

To what extent our creative culture draws upon the land, the landscape, and particularly "wilderness" is the theme of this paper. The immense philosophical library relating our very survival as people to a reverence for the land, for wilderness, and for nature, from Thoreau to Abbey, provides an impressive backdrop. Unfortunately, the philosophy that the land and all its many resources is the wellspring of America's creative culture has yet to capture national understanding let alone attention with anything approaching

the more obvious influence it has had on our economic culture.

If culture mirrors national spirit, and if America's spirit evolved from and is nourished by land resources, the linkages must be demonstrable. And, the resource principles of "limits of acceptable change" take on dramatic new meaning when "unacceptable" has the potential to diminish our ability to express our national identity. This ultimately leads to questions of national security. Like Maslow's "Hierarchy of Human Needs," nations too have higher needs.

In the preamble to its 1987 report to President Reagan, the President's Commission on Americans Outdoors alluded to these vital connections, suggesting that no mere accident of history matched a national character of independence, generosity, and ingenuity with a land of opportunity and vast abundance. Some have theorized only the bold immigrated to America; but can we be sure the American people's resourcefulness and creativity are not, at least in part, a product of the endless challenges and inspiration and wonder of the land? A pervasive theme, throughout the commission's report, is that we have taken "our" outdoors for granted until "it" faced a crisis.

The outdoors' very characteristics of vastness and unlimited abundance encourage complacency, as does our extensive system of public lands and the myth they are "reserved and pro-

tected for all time." By repeatedly responding to "its" crisis with typically American generosity of spirit, we created more and more public lands. The commission seems to be strongly suggesting that this answer alone does not adequately address the growing lack of understanding about our cultural ties to the land. The annual $15 million bill for picking up litter in those special places we call National Parks is one of many clues that we have somehow failed to make our point.

Until our cultural as well as economical ties to the land are understood and become the foundation blocks of a national outdoor ethic, we may just be compounding the problems both inside and outside "the reservation." We cannot hope to retain our cultural vitality if we have to send our future artists, photographers, sculptors, writers, and composers to remnants of wildlands or "museum" wildlife diaramas for inspiration—and, even there to find those resources blighted.

Our purpose in this very preliminary analysis is not to prove a theory—but to help develop one. Except in the final analysis, which we all hope to avoid, the theory is probably not provable. Short of waiting for that ultimate test, we believe that a convincing storehouse of evidence already exists buried in the biographies of creative Americans from all walks of life and in the published and unpublished scholarly analyses of American art, music, and other forms of creative expression.

We propose to develop a brief glimpse of what may be in that storehouse. We hope this glimpse will demonstrate it is just as easy to "fly" over America's culturescape and observe the myriad ways the land has influenced our art, music, and literature. Fortunately, a number of great scholars have provided us the raw material to do just that: Gilbert Chase with his "America's music from the pilgrims to the present;" Joshua Taylor with "America as Art;" and Van

Wyck Brooks with his five volume, "A History of the Writer in America." We are indebted to these and other students of American culture for their scholarly analyses. But the conclusions we draw from their works are solely our own.

At the turn of the present century, Frederick Jackson Turner expressed grave doubts about our national future once we lost the challenge of the frontier. The thought that in taming the wilderness, we also tamed ourselves, is still a very sobering one. The frontier may be gone, but we remain surrounded by challenges—not the least of which is to understand who and what we are. We suggest that this subject ranks along with national defense as a priority for federal attention and support.

The Land as Literature

Because America's literary heritage provides the longest and richest trail of cultural expression, our analysis must necessarily be superficial. Van Wyck Brooks', "History of American Life as Seen Through the Literary Window" was designed to simply document the fullness of our cultural heritage; and yet, even a casual reading demonstrates the powerful influence of the outdoors on America's most celebrated writers of the 19th and early 20th centuries.

William Cullen Bryant, botanist, poet, father of American song, escaped the city daily to seek refuge among the groves of the quiet Hudson. At the age of 17, his poetry indicated that he had already discovered his country and freed it from the faded fancies of an older world. And, reflecting a familiar pattern of creative cross-fertilization, Bryant's literary achievements are credited with being largely responsible for encouraging the Hudson River School of Painting. It is said that Bryant's rendering of the world of nature in moving verse raised him above all his contemporaries.

Solitary communing with nature, and the simple life, became recurring themes in the popular writings of other giants like Emerson, Whitman, Thoreau, and much later, Frost. Of all his poetry, Robert Frost chose the very last minute to recite "The Gift Outright" at President Kennedy's inauguration, beginning, "This land was ours before we were the land's." Edna St. Vincent Millay's "Gift" is clearly her sense of the "Miracle of Consciousness" reflected in her poetry which brings to life the natural outdoors of New England and the salt smell of the ocean. Willa Cather's sights and sounds of the Plains, the wind in the winter, and the drumming of the quail are as vivid as the features of her immigrant farmers of the Midwest. And, though Mark Twain wrote mostly from the comfort of the East, like some other western writers, he did as much to make the Mississippi River a focus of national pride, as did Washington Irving for the Hudson two generations earlier.

To single out any one literary figure as exemplifying the creative inspiration of the land would be asking for a quarrel with dozens of others. However, Walt Whitman was one who provides us with a detailed self-analysis of poetic inspiration. It is said that Whitman saw "a symbol of democracy in the summer grass." The following lines excerpted from his lengthy preface to "Leaves of Grass" provide a haunting echo for the philosophy of a President's Commission 132 years later:

> ...The Americans of all nations at anytime upon the earth have probably the fullest poetical nature. The United States themselves are essentially the greatest poem in the history of the earth...The largeness of nature of the nation were monstrous without a corresponding largeness and generosity of the spirit of the citizen...here the theme is crea-

tive and has vista...the land and sea, mountains, and rivers, are not small themes...all is an old and varied sign of the unfailing perception of beauty and of the residence of the poetic in outdoor people...read these leaves in the open air every season of every year of your life.

Sarah Orne Jewett wrote mostly about people, but found her inspiration on the coast of Maine and its "country of pointed firs and wisps of sea fog." The popular Helen Hunt Jackson was catapulted into fame by her concern for the plight of the American Indian; native American culture was solely based upon dependence, reverence, and interaction with the land. This captivated many writers and painters over the years.

Social injustice, a perennially popular literary topic, becomes particularly poignant when the fresh air of freedom is lost. As one Indian spokesman put it, "there was no wilderness before the white man came."

The solitary Emily Dickinson found a poetry in nature that few have matched. James Fenimore Cooper's novels alternated from the forest to the sea. The frontier's religious fervor, the Southwest's simplicity and mystery of Indian life, California's expansiveness, Alaska's challenge, and the earthiness of the South and of small towns gave theme to America's most respected authors for 200 years: Sandburg, London, Macleish, McPhee, Faulkner, O'Neill, and later Snyder.

John Nichols' "If Mountains Die" is a poignant piece about the heart and soul of the Southwest's people and their relationships to that particular landscape. The best writing conveys a message about the writer; the values of the land to these writers are not themes as much as they are personal beliefs. Brooks writes of "Emerson's ecstasy over nature."

Of all of the inspirational sources, war, urban life, society, social injus-

tice, reform, love and innocence, the work place, crime, and adventure (all represented in Brooks' analysis), none seems to have the universal popularity of the outdoors and its elements of nature, wilderness, wildlife, Indians, and the frontier. Yet, in response to loosing these inspirations, a new breed of contemporary literary giants emerged. Edward Abbey, Barry Lopez, Rene Dubois, David Brower, Philip Fradkin, Rachel Carson, Roderick Nash, and many others sounded the alarm that if we lose the inspiration, we lose our identity, our spirit, and ultimately our national character.

The Land as Scenery

In 1840, N. P. Willis of Portland, Maine, published a massive treatise titled, "American Scenery." Profusely illustrated with steel plate engravings, Willis introduction states:

There is a field for the artist in this country which surpasses every other in richness of picturesque. The great difficulty is where to choose. How draw the vanishing lines which mark...the greener belts through the wilderness which betray the wandering watercourses...or the airy wheel of the eagle.

One hundred and thirty-six years later, commemorating the bicentennial of the American revolution, Joshua Taylor's "America as Art" was introduced with the thought that even in the mid-20th century it comes as a surprise to the public that the nation's art has played a role in America's identity. Taylor, the Smithsonian's Director of the National Collection of Fine Arts, not only devotes nearly one-half of his book to themes of the land and its symbols, he includes a major essay updating Turner's frontier thesis.

The "second discovery of America," as Taylor describes it, was per-

haps more exciting than the first—a realization that not only was it a continent of fresh, new ideas and imagery but it was also a cultural revolution every bit as powerful as the political revolution. The American artist did not reject European rigidity in artistic style through any conscious sense of nationalism, he simply sought to accurately portray its newness, its freshness, its vitality, and its grandeur. While a few may have deliberately attempted to defy traditional western standards of the times, it seems clear that what may have been seen in Europe as American exaggeration and boastfulness was artistic honesty, sometimes even modesty, in capturing new images of reality and new heights of spirit! Visual art was the necessary companion to literary limitations, and the two created a powerful wave of interest that would someday be labeled "tourism" and would become one of the nation's major imports.

But there were no offices of tourism to serve as patrons of art. In fact, landscape art was little more than a diversion from the business of portraiture. And, it was, therefore, an honest expression of their world as they saw it. Even for those artists who sought expressive diversion in creating the symbols of their land, heroic outdoor images emerged of Daniel Boone and bears, of eagles and Indians, all fully as powerful in shaping our national spirit as were the stylized images of Washington, liberty, and justice.

It was not until very late in the 18th century that portfolios of American landscapes became popular and the profession of landscape painting became a realistic opportunity as a livelihood. But, once discovered, the business of landscape imagery grew with dazzling speed and variety; by the time the westward "movement" had become a national fever, it was an established "industry." And, it was an industry supported both directly and indirectly by political necessity as the explora-

tions of Lewis and Clark, Zebulon Pike, Jedediah Smith, and William Ashley sparked widespread popular interest with their sketches and written descriptions of lands beyond imagination.

In 1825, the Hudson River school had firmly established the American landscape tradition, and William Cullen Bryant's friend, Thomas Cole, had achieved pre-eminence in capturing the American wilderness on canvas. It is interesting to note that Emerson's crucial essay "Nature" and Cole's series on "Course of an Empire" both appeared in 1836. Cole increasingly withdrew from the city. He, as well as countless others, are demonstrable examples of the axiom that talent and the inspiration which manifests it is cultivated in solitude. John James Audubon was already drawing birds in Kentucky; Samuel Seymour and Titian Peale had painted the Rockies as part of the 1819-20 long expedition. In rapid succession, the American landscape produced the timeless art of George Catlin, Thomas Moran, George Bingham, John Mix Stanley, James Alden, Rudolph Kurz, Paul Wimar, William Ranney, and the legendary Albert Bierstadt, Frederick Remington, Charles Russell, and hundreds of others. Their names and their origins leave little room for doubt that this unique and wild landscape had captured even the best of artists in ways they could only hope to capture it.

Georgia O'Keefe was the most skilled of all contemporary native artists because she could capture the genius of simplicity that is the principle of nature. It is worth noting that the inspiration for many of these artists was the aboriginal, the American Indian, not only as a subject, but as a study. Jack Highwater put it this way, "The primeval mind knows space experientially. The western mind perceives space in linear terms." This observation can be discerned in American art as it can in our land use patterns; for example, national park boundaries and section lines. As land gave way to industrialization, art changed. Geometric shapes, cubism, synchronism, and precisionism appeared. In reaction, magic realism surfaced, a nostalgia for the loss of rural life to the complexities of urban living.

By the 1870's landscape photography was in vogue, and stereopticon images made it possible for Americans everywhere to become armchair travelers across their country. Photographers like E. O. Beaman, James Fennemore, and Jack Hillers were officially recording the geological studies of John Wesley Powell in the Colorado Canyon. Frontier photographers like L. A. Huffman produced pictorial documentaries of the last of the Indian wars, and the decimation of the buffalo herds, while other like Silas Melander and William H. Jackson captured the breath-taking scenery of Yosemite, the Sequoias, and the detail of early western logging and life on the prairie many times, at great risk to themselves.

In the midst of the frontier photography boom, at the turn of the century, Ansel Adams was born; a man who developed the most powerful tool imaginable for the preservation of the American wilderness, a man who was destined to bring to landscape photography a new way of looking at nature.

Trained as a musician, Adams' photography "sang" of the wilderness with the combined power of MacDowell's "Woodland Sketches," Copland's "Outdoor Overture," and Grofe's Canyon Suite!" The photographic artistry of Ansel Adams' tradition is carried on today by Porter, Ward, Fielder, Till, Ulrich, and countless others.

Another photographic legend is Alfred Stieglitz. Although his subjects were stills and studies, his influence on the work of Georgia O'Keefe is profound. It is through him that she learned to see the true nature of nature.

Nature on canvas, on photographic plates, carved in wood, or sculpted in bronze is never so much a theme as it is a statement. A statement of the virtues of wild nature and its attributes of freedom and character building ("bring me men to match my mountains!") was important back when it was popular to believe that Europe was in a state of moral decay and the salvation of western culture resided in America. Similar statements, in any era, serve as a reminder of national vitality and spirit. By the millions today, individual outdoor expression, whether through landscape photography, painting, or sculpture, makes a profoundly American statement! Wildlife prints, stamps, and motifs abound in the nation's gift stores. Outdoor scenery is the marketeers choice not just for skis, campers, and cars, but for beer, soap, and cigarettes! Clearly America's love affair with the outdoors, though perhaps more subtle, easily out-distances its combined love affairs with automobiles, fast food, and sports!

The Land as Song

There can be little doubt that in music, America has found its most pervasive celebration of the land. The perennial popularity of classical, patriotic, and folk songs to the land, the rivers, and the mountains suggests that their composers have tapped a depth of feeling in the nation's consciousness that other art forms cannot approach. "This land is your land," "America the Beautiful," and "Rocky Mountain High" conjure mental images of pride as well as grandeur. But, identifiable national music took much longer to establish itself in America because composers looked to Europe, and particularly Germany, for approval well into the 19th century.

Though much slower to develop its own distinctive flavor, America's music eventually became the world's music; drawing from the land and pulling us to the land. Gilbert

Chase's authoritative analysis points out that American music had to wait much longer for the equivalent of a Melville or a Walt Whitman. As late as the mid-1850's, the New York Philharmonic was criticized for never having played an American composition; although it had, once! That once was the music of George Frederick Bristow, a "Champion of American Music." A man who was inspired by the natural wonders of the land whose final work was a symphony entitled "Niagara."

William Henry Fry, the man who protested the Philharmonic's European bias, was himself a composer and a lecturer on American music who called for an "American declaration of independence in art;" guided only by nature and inspiration.

In just a few short years, Edward MacDowell was being acclaimed "America's greatest composer" and "The one name in music that could be paired with that of Whitman in poetry." The fact that McDowell was profoundly influenced by nature is evident not just in his compositions such as "To a Wild Rose," "To a Golden Rod," and "To a Water Lily," but in his inspirational retreats to the New England woods where the McDowell colony, in Peterborough, New Hampshire, still serves that same artistic purpose! MacDowell, himself, in rejecting the idea of purely national music in the Germanic tradition, said, "What we must arrive at is the youthful optimistic vitality and the undaunted tenacity of spirit that characterizes the American man. This is what I hope to see echoed in American music."

American fascination for European musical styles lingered on despite the countless European composers who, on visiting America, enthusiastically encouraged us to experiment and create an American music inspired by our national scenery! Antonin Dvorak, one of the most outspoken of these visitors (whose relatives now operate a river-running company), lived for a while in Iowa where he wrote a cantata to the American flag and a symphony entitled "From the New World."

Charles Ives (1874-1954), one of America's most prolific composers, drew his inspiration from literally everything around him, which was often the outdoors, the land, and the "call of the mountains." His "Concord Sonata," celebrating Thoreau, Emerson, Hawthorne, and the Alcotts, a half-century after their passing, was a major work of musical impressionism in an attempt to capture other artists' sense of "wilderness melody" and the "strength of nature."

The richness of American music in the 1930's and 1940's, drawing from regional songs and jazz, featuring big bands and symphony orchestras, and names like Aaron Copland, George Gershwin, Roy Harris, was finally 100% American! The influence of the outdoors was still there in the form of inspirations from folk ballads, spirituals, and cowboy songs, coming close to the surface in melodies like "Appalachian Spring," "Rhapsody in Blue," "Saga of the Prairie," "Rodeo," and "Home on the Range."

Today's American music continues the trend of reflecting the rich and complex phenomenon of land and people that is America. The land's influence continues to find its way into our music in more and more subtle ways, occasionally rising to the crescendo of popularity of a "Rocky Mountain High!" But again, the threat of losing the inspiration brought fourth musicians such as Joni Mitchell with her "Big Yellow Taxi," Joan Baez' ballads about pollution, and Judy Collins' music to the humpback whale. Nature inspired Paul Winter to the point that his music blends so beautifully with the sounds of nature; it is difficult to tell where one begins and the other takes over. And there is a very recent release, "Orca's Greatest Hits!" The message collectively is that everyone is downwind; everyone is downriver. Everyone is...one. This era of musical inspiration is an effort to get Americans dancing with the environment instead of marching against it.

Conclusion—The Land as National Spirit

We make no pretense to be definitive; we hope to be provocative in arguing for the land as a cultural imperative, and in encouraging other more objective social analysts to examine the broader cultural implications of the change in America's landscape and America's wildness. If there has been a similar shift to an artificial capital "S" in our national spirit, the clues exist and need only to be assembled, studied, and interpreted. The possible diminution of cultural vitality with the loss of wild places has profound implications for the future of the nation. One has only to look at those nations which have lost their natural diversity and agricultural vitality. They are losing their distinctive cultures and spirit. The energy has drained from the people. We believe, with the President's Commission, that the condition of the outdoors, the untouched vastness of America's wild country is a statement of the American condition; and we believe, with Robert Frost, that we are the land.

Literature Cited

Americans outdoors: the legacy, the challenge. 1987. Report of the President's Commission. Washington, DC: Island Press. 420 p.

Brooks, Van Wyck; Bettman, Otto. 1956. Our literary heritage. New York, NY: E. P. Dutton & Co. 240 p.

Chase, Gilbert. 1966. America's music: from the pilgrims to the present. New York, NY: McGraw Hill. 759 p.

Taylor, Joshua C. 1976. America as art. New York, NY: Harper & Row. 321 p.

Whitman, Walt. 1982. American bard: the original preface to "Leaves of Grass." Arranged by William Everson. New York, NY: Viking Press. 35 p. [Originally published in 1855.]

Willis, N. P. 1971. American scenery. Barre, MA: The Imprint Society. 362 p. [Originally published in 1840.]

Psychological Necessity for Wilderness in the Life of George Catlin

Wilson Hall[1]

Abstract.—A wilderness environment seems to have been essential in the psychological maturity and creativity of George Catlin from early childhood until the last decade of his life. This dependency was born of two major transformations which occurred early in his life and was affirmed by a dramatic turning point later in his life. It was also affirmed by the abundance of creative energy which he experienced in wilderness and the absence of it in civilization. The tools used to examine these aspects of Catlin's life are Carl Jung's model of the psyche and his theory of psychic energy.

In December 1872, George Catlin, world-famous Indian painter and ethnologist, settled for his last days into his daughters' home in Jersey City, New Jersey. He was extremely deaf, penniless, and sick unto dying; his life's work, which he called the Indian Gallery, was mortgaged and stored beyond his redemption in a locomotive manufacturer's leaking warehouse in Philadelphia. His recreation of it, which he called cartoons, and the paintings from his South American travels, were on temporary display in the Smithsonian Institution, unpurchased and unlikely to be purchased by the U.S. Congress. In this apartment ended a road that began in 1796 when he was born in Wilkes-Barre, Pennsylvania, and, during the course of 76 years, wound through the vast wilderness areas of North, Central, and South America and passed through some of the most civilized cities of Europe and Great Britain. Following this road he spent his life pursuing facts about the American Indians, painting their portraits and landscapes, hoping to record their activities before the advancing European civilization and the raw cupidity of this country's industrious citizens annihilated them and their way of life forever. Following this road he told the civilized world again and again of the humanity and human brotherhood of

[1]Interdisciplinary Studies, Shorter College, Rome, Ga.

the American Indians and of the tragedy of their coming destruction. At 76, sick beyond recovery and a near stranger to his family, he paced the floor of his daughters' home saying, "Oh, if I was down in the valley of the Amazon I could walk off this weakness." On December 23, in the expectancy of Christmas, he died, talking constantly of his Indian Gallery, and longing to return to the wilderness of the Amazon (Roehm 1966:411).

There was something innate in Catlin's nature which drew him to wilderness, and this part of his nature opposed the training from his father, who impressed upon him that he must honor the Catlin name and make a place for himself in the civilized world. This conflict of opposing drives in Catlin, when examined by the model of Carl Jung's psyche (1960), produces some interesting thoughts concerning the relevancy of wilderness not only to Catlin's basic nature but also to the basic nature of all people; namely that contact with nature is essential for the healthy development and individuation of the psyche. By Jung's view, the mind is a closed energy system in which the flow of psychic energy is innately urged from the unconscious into the ego where it is perceived in meaningful images. The end of this flow of psychic energy, as with all energy, is entropy, but its effect is a finished personality, developed according to the innate and individual pattern

proceeding from the unconscious. Along the way, in talented individuals, art may be created. Often in conflict with the will of the ego, the unconscious is always dominant. If the will attempts to stem or thwart the flow from the unconscious, neurosis, or psychosis results, even total shattering of the personality. However, when the will opens to the flow of psychic energy, the human lives a harmonious and fully-developed life.

Catlin's psychic system found a homeostatic flow of his psychic energy only when he was in wilderness. It is impossible to name specifically the thing in Catlin's psyche which demanded wilderness. It would be comforting to say that there is an archetype or some constellation of archetypes which encouraged it as there are for motherhood and family. But probably the safest thing to say is only what Jung (1873) said of himself, that he "had to obey an inner law which was imposed on [him] and left [him] no freedom of choice" and that "a creative person...is captive and driven by his daimon" (1873:357). For Catlin, an innate passion for wilderness was his daimon.

In order to study the psyche of Catlin, this paper will examine two major events in his psychic life: the first at 31, when he redirected his life from civilization to wilderness and a second shortly afterward when he underwent a transforming experience among the Indians along the

Missouri River. A third event, one similar to the first, which occurred in his 50's and was trapped again in civilization, will be examined briefly as a verification of the first.

Prior to the event in his 30's, Catlin had lived in both wilderness and civilization. Soon after his birth in Wilkes-Barre, he moved with his family into the wilderness along the Susquehanna River of upper Pennsylvania and lower New York. During these years young Catlin ran free on his father's plantation, and during the most impressionable decade of these years came under the tutorage of a frontiersman named John Darrow, who taught the boy all the things he would need to know to travel the wilderness areas from Tierra del Fuego to the Bering Straits and from the east to the west coast of the United States. Just as importantly, Darrow furnished him, at that important age, a role model, an object for the projection of his psyche. How important Darrow was to him is reflected in the emotional references which Catlin (1868, p. 13) makes about him in all his autobiographical works, even into his old age when he wrote:

> Oh, how beautiful to my young and aspiring vision the cautious and graceful movements of this stalking teacher! What pupil ever watched the magic touches of his master's pencil with more admiration than I watched the movements of this master-hunter as he led me through the forests and rocks and ravines of the mountain side? No time or circumstances have ever yet effected the slightest impression then made upon my youthful mind, nor will they leave me while recollections last.

Instruction by George's father on the importance of finding a place in the civilized world was impressed on all the Catlin children, and George,

when he was sent away to law school at the age of 21, gave his best effort to fulfilling his father's dream. But unlike his older brother, Charles, and his sister, Clara, George was not able to abandon the lifestyle which he had acquired on the frontier. When he returned from school and entered a law practice with his brother, his life should have settled down to a routine much like Charles': a daily procession of legal work punctuated by holidays for fishing and hunting. But in reality, this new profession brought to a head the conflict of his two opposing lifestyles, which his stay in law school had made him aware of, and produced a crisis which would continue for another 8 to 10 years.

This kind of crisis Erik Erikson (1962:14) described in "Young Man Luther" when he wrote:

> I have called the major crisis of adolescence the *identity crisis*; it occurs in that period of the life cycle when each youth must forge for himself some central perspective and direction, some working unity, out of the effective remnants of his childhood and the hopes of his anticipated adulthood; he must detect some meaningful resemblance between what he has come to see in himself and what his sharpened awareness tells him others judge and expect him to be.

While Erikson associates this particular crisis with adolescence, its onset seems to have evaded Catlin until he was 21

Such a prolonged adolescence came about because of two things: the dominance of a father who could influence his son's profession, even after the son had reached majority, and the fact that during all those wilderness years Catlin's unconscious never encountered a major confrontation and thus enjoyed an uninterrupted homeostatic flow of psychic energy.

Catlin's letters from law school (Roehm 1966; Smithsonian, no date) indicated that he knew that he was subjugating his will to his father's, but he became aware of a crisis only when he realized that his interest in law was being usurped by a love of his youth which he thought he had abandoned—painting. He recorded in "Life Among the Indians" that during court sessions he "covered nearly every inch of the lawyers table (and even encroached upon the judge's bench) with penknife, pen and ink, and pencil sketches of judges, juries, and culprits." His unconscious, obviously, was rejecting the profession of law. Luckily for Catlin's psychological growth, his solution to the conflict was to acquiesce to the interloping interest and abandon law. He described his decision in "Letters and Notes":

> I was admitted to the bar— and practiced the law, as a sort of *Nimrodical* lawyer, in my native land, for the term of two or three years; when I very deliberately sold my law library and all (save my rifle and fishing-tackle), and converting their proceeds into brushes and paint pots; I commenced the art of painting in Philadelphia, without teacher or adviser. (1973:2)

It is significant to a study of the development of Catlin's psyche to note that he did not sell his gun and tackle, for these are the tools of the man of the wilderness, and the unconscious knew what the ego did not know, that the pursuit of art was not the true solution to the crisis.

His new life as a portrait painter was rewarding enough financially and socially, but in personal satisfaction George found it no more enjoyable than practicing law, and his inner agitation continued. He wrote in "Letters and Notes" that his "mind was continually reaching for some branch of enterprise of the art, on which to devote a whole life-time of

enthusiasm" (1973:2). The cause for his dissatisfaction, of course, lay in his separation from wilderness. Like the guns and fishing tackle which he had packed in a closet, he packed into his subconscious the wilderness experiences of his youth, the lessons of Darrow, and the freedom to be himself. Suppressed there, they waited for a day when something would key their release and they could speak.

They spoke in Philadelphia in 1827, when Catlin was a successful painter, and when they spoke, it was a dramatic, life-changing experience. As Erikson described, all that was of value in his youth suddenly became the value and hope for his future and produced a direction that his life must take in order to quell the agitation in his soul and give him peace. The event occurred when:

> A delegation of some 10 or 15 noble and dignified-looking Indians, from the wilds of the "Far West," suddenly arrived in the city, arrayed and equipped in all their classic beauty—with shield and helmet,—with tunic and manteau,—tinted and tasselled off, exactly for the painter's palette (1973:2).

Even in old age he remembered the import of the experience:

> After...they took their leave for Washington City, and I was left alone to reflect and regret, which I did long and deeply, until I came to the following decision.
> ...Nothing short of the loss of my life, shall prevent me from visiting their country, and of becoming their historian (1868:221).

The force of such a life transforming experience and the complete dedication of his life to the change is greatly akin to a religious experience, and indicates a dedication to something deep within himself, something

which had lain unsatisfied until that moment. How deeply he felt committed to this voice from the unconscious is told in his opening pages of "Letters and Notes" when he stated:

> I had fully resolved—I opened my views to my friends and relations, but got not one advocate or abettor. I tried fairly and faithfully, but it was in vain to reason with those whose anxieties were ready to fabricate every difficulty and danger that could be imagined, without being able to understand or appreciate the extent or importance of my designs, and I broke from them all,—from my wife and my aged parents,—myself my only adviser and protector (1973:3).

Once his unconscious spoke, it would not be denied. It took charge of his life, and, once freed from the civilized world by his decision to become historian to the Indians, it furnished him abundant energy for fatiguing travel, for joy and artistic creation.

Catlin could not have understood the psychology of his decision, yet he was intensely aware that something inside himself was responding to his decision and that happiness was the result, for he wrote of that event:

> There was something inexpressibly delightful in the above resolve, which was to bring me amidst such living models for my brush; and at the same time to place in my hands again, for my living and protection, the objects of my heart...[my rifle and fishing-pole]; which had long been laid by to rust and decay in the city, without the remotest prospect of again contributing to my amusement (1973:2-3).

In the wilderness of the American West, among the American Indians, Catlin found again homeostatic flow

of psychic energy, the peace and satisfaction of his youth.

The second event occurred early in Catlin's western travels and indicated an even deeper transformation than the first.

The event began while Catlin was visiting an old Minataree chief. Admitting that he did not approve of horse racing, Catlin found that he wished to attend a day of such racing among some Indians across the river. The old chief offered the use of his boat, and the service of his wife to swim and pull the boat across the river. In the middle of the river, the boat was met by a group of nude, young Indian maidens who took the boat from the old woman and cavorted with it, spinning it around and around and pretending to keep it from shore, until Catlin offered them some awls from his pocket and strings of glass beads which he put around their necks. Taken ashore, he walked inland to the place where the races were in progress. Here he met Yellow Moccasin, "quite an old man," who was chief of this group and who allowed Catlin to participate in the activities.

Toward the end of the day and feeling sorry for a young girl who had lost all her goods betting on her brother who constantly lost in the races, Catlin found a nag that could not beat the brother's horse, wagered heavily with the sister that he could win the race and asked to be allowed to ride.

When the two riders and witnesses arrived at the beginning of the race course and were preparing to ride back toward the crowd at the finish line, Catlin encountered a problem with his civilized clothing. He claimed that only then did he notice that all the Indians had been riding all day unclothed and barebacked, and so rather than insult them, he acquiesced to ride the same way, "entirely denuded" and on "a naked horse" (1973:198).

As Catlin (1973:198) described the effect of the race on himself, it is easy

to read his psychological experience into it:

Reader! did you ever imagine that in the *middle of a man's life* there could be a thought or a feeling so new to him, as to throw him instantly back to infancy; with a new world and a new genius before him—started afresh, to navigate and breath the elements of naked and untasted liberty, which clothe him in their cool and silken robes that float about him; and wafting their life-inspiring folds to his inmost lungs? If you never have been inspired with such a feeling, and have been in the habit of believing that you have thought of, and imagined a little of every thing, try for a moment, to disrobe your mind and your body, and help me through feelings to which I cannot give utterance. Imagine yourselves as I was, with my trembling little horse underneath me, and the cool atmosphere that was floating about, and ready, more closely and familiarly to embrace me, as it did, at the next moment, when we "were off," and struggling for the goal and the prize.

For the first time in his life, Catlin had a sense of being truly wild. He was as near to reaching humanity's primitive state as he could ever come: completely nude, on horseback, racing across the open prairie, knee-to-knee with a savage born to it. No wonder he felt reborn and back to infancy, even to the point of feeling "a new world and a new genius before him."

How easy for an analyst regarding the narrated description of that event to read that the two old men represented the old self of Catlin which was about to undergo a rebirth, that the river was the division between the old life and the new, that the old wife, representing Catlin's old anima,

could only take him half way across and the young maidens, representing his newly developing anima, must coyly and innocently conduct him to the new side. Having met his old self again across the river, he turned to the young Indian who could not win a race (which was himself struggling to free himself from civilization) and by means of the young sister, induced him to race against the civilized self, for it is the feminine or anima which must conduct him to any profound change and the race was the means to this end. Divested of all his clothing he was reduced to his natural state, and the horse represented his animal nature. Once the race was underway, it was the two selves of Catlin at contest for the rest of his life, and the old Catlin, wanting to lose—planning and betting to lose—seeing that he was, indeed, about to lose, and aware of his nakedness, turned aside before the horses crossed the finish line in order to hide his nakedness from the crowd, and the new Catlin, the wild man, naked and free of any of civilization's trappings, crossed the line to the cheers of the crowd of welcoming savages. The race itself was, obviously, the means by which Catlin's unconscious communicated to his ego the change that had already occurred there. Catlin's narrative of the event reveals the ego's perception of what occurred and his writing of it acknowledges the change.

It is not surprising, then, to find Catlin (1973:34) impatient with civilized life after his return home. Upon visiting his brother, the lawyer-cum-real estate investor-cum-banker in Florida, Catlin longed for the Wild West again. He wrote of that visit:

I shall hail the day with pleasure, when I can again reach the free land of the lawless savage; for far more agreeable to my ear is the Indian yell and war-hoop, than the civilized groans and murmurs about *"pressure," "deposits,"*

"banks," "boundary questions," etc.; and I vanish from the country with the sincere hope that these tedious words may become obsolete before I return.

Nor is it surprising, a couple of years later, for him to write: "I have become so much Indian of late that my pencil has lost all appetite for subjects that savor of tameness" (1973:37). From the horse race onward, Catlin was more naturally at home in the wilderness than he had ever been before, more at peace.

After Catlin had been some 15 years in England and Europe, he underwent an experience similar to his earlier one in Philadelphia. He had gone to England for a short stay, hoping that the threat to sell his art collection in England would force U.S. Congress to purchase it for the Smithsonian Institution. He wanted also to please his father by establishing an international reputation as a painter and ethnologist, to make some money from his lectures and books, and to develop some worldwide sympathy for the plight of the American Indians. Beginning in London on a high note of success, circumstances and bad judgment eventually brought him to the depths of economic and emotional depression. Immediately as he arrived in England, his artistic creativity was replaced by desperate schemes to make money, and his painting was limited to copying his extant work for customers. Because of fever epidemics in Paris, he lost his wife and only son to death. Because of the French Revolution he was not paid for several months' work for King Louis Philippe. Because of his commitment later to London's debtors' prison, he lost his two daughters to his brother-in-law in America. Because of his huge debts, he lost his Indian Gallery to Joseph Harrison, a locomotive manufacturer, who stored it in a leaking warehouse in Philadelphia.

Besides the physical hardships of living, Catlin suffered also from the suppression of his passion for wilderness, worse than he had suffered in Philadelphia and New York. When he was at the lowest emotional point of his life, he met in Paris a German naturalist and a French botanist on their way to South America to do research. They recognized Catlin immediately as the famous American artist, ethnologist, and man of the wilderness, and they asked him to accompany them, offering to pay half his expenses. At that moment, the suppressed voice of the unconscious spoke again, just as it had in Philadelphia, and listening, he was immediately galvanized with a fantastic surge of his old energy.

The energy is manifested in his letters which follow this event and is revealed in his enthusiasm for new work and his determination to return to wilderness in spite of any obstacle. In his unpublished letter (March 9, 1854) to Sir Thomas Phillipps, a man on whom he had always been able to depend for money, the importance of wilderness to Catlin was expressed in the pleading line, "I could live more in one such year than most men could in 5" (Gilcrease, No Date), and in another unpublished letter to Sir Thomas (March 24, 1854), whose debts prevented him from lending money to Catlin, Catlin's terrible drive to get back into wilderness was made obvious when he wrote, "*I do not know how* to relinquish my plan to South America nor do I yet see *how I am to go*" (Gilcrease, No Date). In his writings after he arrives in the jungles of South America, it is obvious that the old Catlin has returned, for he wrote:

> Who is the happiest man in the world just at this time? Why, Doctor Hentz, while he is gathering these beautiful plants and lovely flowers, and packing them in his large books...And who the next happiest? Why, I, of course, who

am putting these beautiful scenes into my portfolio... (Catlin 1868:224).

Modesty probably prevented him from claiming the first position for himself, but the point is well taken that he is intensely happy to be again in wilderness.

For all of the next decade he lost himself in wilderness again. But more importantly, the psychological process of individuation which had been in abeyance for the past decade and a half, began again and continued, just as it had in the North American wilderness, and the thing which he had needed and looked for in the North American wilderness he found again in the South American wilderness. He found the essence of his savage nature reflected in the wild environment and jungle people and in the activities and experiences in which he participated. In his book on that period, "Life Among the Indians," he described an event which showed that he had come to realize the essential wild nature which arose from his unconscious. Standing on the deck of an Amazon steam boat which had been drawn to shore for repairs, he noticed that a group of Indians camped on the shore recognized him. Immediately he recognized them as a tribe with whom he had hunted turtle eggs months before, and he went ashore where they welcomed him with warm embraces and much shouting. He wrote of that moment:

> Oh how pleasing such meetings are to me How I love to feel the gladdened souls of native men, moved by natural, human impulse, uninfluenced by fashion or a mercenary motive Mine! I know, has something native remaining in it yet (Catlin, no date:306).

One cannot avoid the question of what Catlin's life would have been like if there had been no wilderness to which he could escape. Perhaps

the letters from the 25 years which he spent in civilization tell us that story, years of stress, disappointing work, and failure. Perhaps he would have internalized his need for wilderness, and it would have found expression in vague, unintelligible paintings. Perhaps he would have become like his brother Henry, a miserable, unsuccessful farmer who eventually disappeared from the family's notice.

The fact that wilderness brought about the complete individuation of Catlin's psyche is seen in the final product of his life's work, a collection of books, artifacts, and paintings which reflect his mind. His artistic theme was the human brotherhood of the Indians, not raising them to civilized standards in order to manifest it, but showing their oneness with their civilized brothers even in their esoteric dress and wild, paradisical environment. When the paintings were finished he arranged to show them in a rectangular hall "125 feet in length and forty feet in breadth," covering the entire surface from floor to ceiling, after which he pronounced them "done," adding that "where ever it goes, to Berlin, to Russia, or to my native land, I have the satisfaction of leaving it a finished work" (Roehm 1966:405). In this form, with Catlin at the center to observe what his mind and talent have created, it forms a manila, and in this respect it is an intriguing exercise to compare his work with Jung's Bollingen or his last dream of "a big, round block of stone in a high bare place and on it...inscribed: This shall be a sign unto you of wholeness and oneness" (Hanna 1976:347), for Catlin, in order to know a finished psyche, had to also have a unified image of what his mind possessed.

If the necessity for wilderness in order to accomplish individuation is unique to Catlin, then a probe of his psyche leads nowhere. But it is my belief that such a necessity is not unique to him. Jung's journey into Africa and India were essential to his individuation. It was essential to the

individuation process of Charles Lindbergh that he spend the latter part of his life in world-wide nature conservation, and it was essential to Richard Byrd, Theodore Roosevelt, Ralph Waldo Emerson, Aldo Leopold, Edwin Church, Ansel Adams; the list is endless. I believe that for articulate people such as these, who find wilderness essential in the development of their life, there are also hundreds, perhaps thousands, of inarticulate people who, just as importantly, find it essential, and whose only expression is rafting, hiking, bird watching, fishing, or hunting. It would be enlightening, indeed, to examine the maturing process of the psyches of the articulate in the light of what they have written, painted, or revealed in other ways about wilderness, for here might be yet another ultimate reason not to erase wilderness from the face of the earth.

Acknowledgements

Literature Cited

Catlin, G. 1868. Last rambles amongst the Indians of the Rocky Mountains and the Andes. London: Sampson Low, Son, and Marston.

Catlin, G. 1973. Letters and notes on the manners, customs, and conditions of North American Indians (Volumes 1-2). New York: Dover Publications.

Catlin, G. No Date. Life among the Indians. London: Gall & Inglis.

Erikson, E. H. 1962. Young man Luther: a study in psychoanalysis and history. New York: W. W. Norton.

Gilcrease Institute. No Date. Unpublished collection of Catlin letters and notes. Tulsa.

Hanna, B. 1976. Jung: his life and work, a biographical memoir. New York: G. P. Putnam's Sons.

Jung, C. G. 1960. The structure and dynamics of the psyche. (R. F. C. Hull, Trans.) Bollingen Series XX. New York: Random House.

Roehm, M. C. 1966. The letters of George Catlin and his family: a chronicle of the American West. Berkeley: University of California Press.

Smithsonian Institution. No Date. Unpublished collection of letters, notes, and memorabilia of George Catlin. Washington, DC.

Wilderness Values on Western Ranches

Delwin E. Benson[1]

Abstract.—Philosophical values of wilderness experiences include remoteness, naturalness, escape, solitude, and autonomy. Key wilderness values can be experienced on private western ranches. Users seeking wilderness experiences can pay more equitably for wilderness management on private land than on public land. Options to provide physical amenities desired by a variety of users are greater on private land than on public lands. Managers and researchers are challenged to evaluate these hypotheses. Private ranchers are challenged to use their recreational resources. Wilderness enthusiasts are challenged to obtain their values from private western ranches.

Introduction

Wilderness, as a term, has evolved in the United States to represent remoteness, maximization of naturalness, and minimization of human impacts. This paper reviews philosophical values of wilderness experiences and suggests that: (1) wilderness values can be experienced by recreation on private western ranches; (2) users seeking wilderness experiences can pay more equitably for wilderness management on private land than on public land; and (3) options to provide physical amenities desired by users are greater on private land than on public lands. A challenge goes out for recreational researchers and managers to evaluate these hypotheses and for private ranchers in the West to capitalize upon the recreational value of their property. Wilderness enthusiasts are challenged to use private lands in the West to obtain their objectives. In doing so, recreational pressures should be reduced in designated wilderness areas, and recreationists will be able to participate in management along with the landowner.

Evidence for wilderness values on private land will be developed with data from literature that support the following progression of thought.

1. Wilderness values are experienced by a wide range of users in a wide range of places.

2. Positive experiences are easier to obtain from nonconsumptive (i.e., nonspecific) recreation than from consumptive (i.e., specific goal oriented) recreation.

3. Utilitarian success for consumptive recreation (such as hunting and fishing) can be greater on private land than on public land.

4. The ability to use resources without affecting use by future participants is an important philosophical parameter of wilderness.

5. Private land does not have legislative and regulatory restrictions for use such as restrictions on vehicles, power equipment (saws, generators), tree cutting for firewood, etc. Thus, persons who desire those amenities can increase their satisfaction.

What Are Wilderness Values?

Wilderness is in the eye of the beholder (Clark et al. 1971). Remoteness and vastness to some can be contrasted with "wilderness experiences" reported by campers in developed campgrounds (LaPage 1967). Even recreation managers misinterpret the attitudes of campers and the wilderness experience they reported from developed campgrounds (Clark et al. 1971, Downing and Clark 1979, Hendee and Harris 1970).

Imagine what early American Indians thought about their wilderness home. How did the first explorers categorize the western United States? What was the natural resource value of the Louisiana Purchase? Remember, not long ago, the purchase of Alaska was called Seward's Folly.

Lucas (1964) provided the following historical insights into attitudes about wilderness that were previously reported by several authors. Over a century ago, impressions about wilderness and scenery were nearly opposite of today's. The New England wilderness was termed hideous and desolate. Mountains and wild lands were detested. Attractive landscapes were soft, fertile fields improved by human husbandry. Lands with ancient historical associations were important in Europe. Formal gardens with geometric architecture were preferred over naturalness.

French voyageurs in the 18th century called part of present day Minnesota-Ontario border "le beau pays"—the beautiful country—but the area they described was not the rocky canoe country. It was the glacial lake plain farther west with level,

[1]Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins.

often open areas reminiscent of farm-land.

Perceptions of wilderness changed due to religious, philosophical, and scientific ideas prompted also perhaps by changes in appearance of humanized landscapes (Lucas 1964). Wilderness as a resource in its own right, rather than land to be developed, was probably tied to the "closing of the frontier" and from ideas, such as historian Frederick Jackson Turner's, that the frontier shaped American character. Urbanization cut people off from the land, and that may have contributed to a feeling of loss of continuity and security.

Appeals for public action to set aside wilderness were made by George Catlin, painter of Indians, in 1833, followed by Thoreau and George Perkins March. Yosemite and Yellowstone Park reserves resulted from such actions. The act establishing Yellowstone would "Provide for the preservation from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders...and their retention in their natural condition." This was a germ of the wilderness idea without reference to large, roadless tracts. The Adirondack Forest Preserve in New York was established as "forever wild" in 1885 mainly to prevent timber exploitation rather than to promote general wilderness values.

Specific wilderness reservations began with Aldo Leopold, Arthur Earhart, and Robert Marshall in the 1920's. Another surge came in the 1930's, followed by major designations in the 1960's with the inception of Public Law 88-577, The Wilderness Act of 1964. This formal designation stated that a wilderness is:

> ...an area where the earth and its community of life are un-trampled by man, where man himself is a visitor who does not remain...an area of unde-veloped Federal land retaining primeval character and influ-ence, without permanent im-

provements or human habita-tion, which is protected and managed so as to preserve its natural conditions and which:

1. Generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;

2. Has outstanding opportu-nities for solitude or a primitive and unconfined type of recreation;

3. Has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and

4. May also contain ecologi-cal, geological, or other features of scientific, edu-cational, scenic, or histori-cal value.

Many adjectives describe wilder-ness and wilderness experiences. The following list includes terms and phrases attributed to officially desig-nated wilderness. The author con-tends that these same attributes are found on many ranches in western United States.

Achievement (Brown and Haas 1980)

Aesthetic enjoyment of natural settings (Rossman and Ulehla 1977)

Autonomy (Brown and Haas 1980)

Challenge and adventure (Ross-man and Ulehla 1977)

Emotional or spiritual experi-ence (Rossman and Ulehla 1977)

Escape from the familiar (Ross-man and Ulehla 1977)

Escape from urban stresses (Rossman and Ulehla 1977)

Escape pressures (Brown and Haas 1980)

Natural environment (ORRRC 1962, Stankey 1973)

Primitive (Lucas 1964)

Pristine (Stankey 1973)

Reflection on personal values (Brown and Haas 1980)

Relationships with nature (Brown and Haas 1980)

Remote (Lucas 1964)

Rugged (Lucas 1964)

Self-actualization (Scott 1974, Young and Crandall 1984)

Sharing/recollection (Brown and Haas 1980)

Solitude (Stankey 1973)

Uncivilized (Lucas 1964, ORRRC 1962, Stankey 1973)

Uncommercialized (Lucas 1964)

Wild (Lucas 1964)

"Wilderness experiences" are not limited to participation in designated areas. In fact, users may not even know where wilderness is. For ex-ample, visitors to the Quetico-Supe-rior Area were asked where they had been, if they felt they were in wilder-ness now, and where members of their group thought wilderness be-gan (Lucas 1964). Canoeists cited wil-derness quality twice as often as most other visitors. Car campers were next highest in their interest in wilderness. Canoeists saw a much smaller wilderness area than other types. Some respondents said they never reached the "wilderness" and

others placed wilderness gateways in central Minnesota over 100 miles back down the road. Boaters usually included roads and small towns as part of wilderness. A substantial number of respondents mentioned "the end of the blacktop" as the beginning of wilderness. Lucas (1964) summarized that visitors did not have clear wilderness perceptions, and much variation is associated with the recreation chosen.

Catton (1969) contrasted two motivational extremes between ardent mountain climbers versus sedentary campers. The mountaineer's quest for uncertainty and the urbanized camper's quest for privacy, freedom to socialize, and freedom from tension led Catton to suggest that visitors may have diffuse or specific purposes for their experiences. Satisfaction from experiences was inversely related to specificity of desired outcomes based upon 12 separate studies of consumptive and nonconsumptive uses across the United States (Vaske et al. 1982). The assumption that wilderness values can be obtained from specific and diffuse experiences and that consumptive users (specific experiences) need greater success than nonconsumptive users lends support to the contention that private lands can provide better wilderness values to some persons than designated wilderness. Fridger and Hinkelman had data indicating wilderness-related rewards were experienced along a continuum increasing from city parks, through state parks, to wilderness areas (Iso-Ahola 1980). Rossman and Ulehla (1977) found many of their wilderness parameters were experienced only in roadless and untouched wilderness or improved mountain country. From the data it was implied that a complete wilderness is not necessary to obtain psychological rewards. Vaske et al. (1982) related recreationists' satisfactions to the interaction between individual characteristics and the characteristics of the activity. He concluded that there are values to

a variety of wilderness recreation settings in terms of easy access and facilities, degree of restriction of nonrecreational uses, and limits on types and amounts of recreational use. This may open a wilderness door to private lands.

Role of Private Western Ranches

Catton (1969) said that wilderness motivations are learned, not inborn, which might explain why wilderness satisfactions vary, why managers presume wilderness users' perceptions incorrectly, and how positive experiences on private lands can lead toward a trend in using western ranch lands for wilderness experiences. Research by Schreyer and Roggenbuck (1978) suggested that reasons for recreation participation are generally attributed to specific satisfactions which participants know, value, and expect. Many recreationists already know the value of private land for uses such as hunting and fishing. Wilderness values, per se, may not be known now, but can be learned.

Overcrowding is a concern to wilderness purists (Stankey 1973) and an ever-increasing problem (Lucas 1985). Private lands can easily be managed to reduce crowding by mutual decisions between paying users and landowners.

Paying equitably for satisfaction received is a common concern of businesses and a reality for managing recreational lands. Generally, persons who seek services such as modern campgrounds, roads, interpretive programs, wood for the fire, etc., are prepared to pay additionally for those amenities beyond an entrance fee. Persons in this category are prepared for greater congestion and may even desire association with other campers. Because they are confined to organized spots, and because more persons are tolerated, the land is used effectively and efficiently for the revenue received. Wil-

derness recreation by definition offers more remoteness, less development, and freedom from crowding. In so doing, only a few persons can be in an area at a time and the real cost of providing space per person accelerates without commensurate pay from visitors in designated wilderness areas. In fact, less money is obtained from wilderness users even though their satisfaction requires greater natural resource inputs.

Some demand for wilderness value satisfaction could be supplied on private lands. Many western ranchers have large acreages, beautiful scenery, reasonable accessibility, and opportunities for hiking, camping, climbing, hunting, fishing, etc., in addition to the psychological values of wilderness. Access can be controlled to meet objectives of landowners and users. More intensively managed areas for high densities of users could be provided on part of the property, while low density tent-camping and hiking could be allowed in other parts. Conflicting uses could be separated by time and location of use. Fees charged could be commensurate with experiences desired. Persons desiring to spend 2 weeks on the property alone or with a small tent-camping party would be expected to pay for the exclusive use. Campers using outdoor recreation vehicles would accept more crowding and perhaps use less back-country, thus more persons could be tolerated on the ranch at a time. For this group, payment to use the ranch would be proportionally less than for back-country, low-density users assuming similar use of facilities and services.

Other considerations for proper cost scheduling would include resources used and services provided. Obviously, if water and sanitation facilities were provided for users, costs would have to reflect those expenditures whether provided in the back-country or in high-density areas. Ironically, high-density users could be expected to bring resources

with them such as water, portable or self-contained potties, and even sources of light and firewood. If so, their effect on the ranch resources could be much less than low-density back-country users who may desire to use firewood, contribute to sanitation problems, and need a water supply due to giardia in mountain streams. Using resources such as fish, wildlife, wood, berries, and mushrooms could be included as products of the ranch on a managed basis. For some, this would add a substantial component to their wilderness experience.

Challenge to Landowners and Users

Management and marketing of private land experiences may be the challenge of the 1990's. It may take a while for users and producers to accept the opportunity because it is relatively new. However, farm vacations in the East and dude ranches in the West have operated for many years. Vogeler (1977) estimated that 2,000 vacation farms and dude ranches existed in the United States. His survey of 1,472 vacationers on these properties revealed that they enjoyed peace and quiet and privacy by relaxing on private property which guaranteed those conditions. The absence of organized and planned activities was appealing to both youth and adults. Attitudes expressed by wilderness users in designated wilderness settings were not much different than those of farm and ranch vacations. Even if the "purest" wilderness user would not accept a private ranch experience, the author contends that many persons would, based upon arguments presented in this paper.

Landowners may be slower at providing opportunities than the public will be to accepting them. It is quite different to manage people and recreation compared with traditional ranch products. Hunting enterprises

on private lands are common in the United States and growing in the West. Many of these businesses offer "wilderness" opportunities. The time seems appropriate for the private sector to pursue these added income-generating opportunities. Traditional ranch products, such as cattle, require large tracts of land, yet return on the investment is poor. Those same tracts of land, with or without cattle, can be turned into recreational assets.

The complexity of factors influencing landowners' attitudes toward recreation and subsequent recreational development appeared to cluster in three broad areas according to a study of 19 landowners by Shilling and Bury (1973). First, the land-management philosophy of individual landowners was a key factor. Second, landowners were concerned with resource degradation resulting from human use such as fire, vandalism, and littering. Third, landowners were concerned that free access to public lands may reduce the likelihood of paying to access private lands. In the author's opinion, precedents have been set for paying to access private land for uses other than wilderness such as hunting, fishing, and ranch vacations. Willingness-to-pay studies should be conducted for specific market analyses.

Pressures to recreate in wilderness are increasing. Wilderness experiences are possible on private lands. Private lands offer a special ability to control access, provide services, and charge accordingly. It seems only a matter of time until "wilderness" recreation will be a part of many western ranches.

Literature Cited

Brown, P. J.; Haas, G. E. 1980. Wilderness recreation experience: the Rawah Case. Journal of Leisure Research. 12(3): 229-241.

Catton, R. C., Jr. 1969. Motivations of wilderness users. Pulp and Paper Magazine of Canada: 121-126.

Clark, R. N.; Hendee, J. C.; Campbell, F. L. 1971. Values, behavior, and conflict in modern camping culture. Journal of Leisure Research. 3(3): 143-159.

Downing, K.; Clark, R. N. 1979. Users' and managers' perceptions of dispersed recreation impacts: a focus on roaded lands. In: Proceedings, Recreational impact on wildlands conference; Seattle, WA: 18-23.

Hendee, J. C.; Harris, R. W. 1970. Foresters' perception of wilderness-users attitudes and preferences. Journal of Forestry. 68(12): 759-762.

Iso-Ahola, S. E. 1980. The social psychology of leisure and recreation. Dubuque, IA: William C. Brown.

LaPage, W. 1967. Camper characteristics differ at public and commercial campgrounds in New England. Res. Note NE-59. Broomall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 8 p.

Lucas, R. C. 1964. User concepts of wilderness and their implications for resource management. Western Resources Papers: 29-39.

Lucas, R. C. 1985. Visitor characteristics, attitudes, and use patterns in the Bob Marshall Wilderness Complex, 1970-82. Res. Pap. INT-345. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 32 p.

ORRRC. 1962. Wilderness recreation—a report on resources, values and problems. Study Report No. 3. Washington DC: U.S. Government Printing Office. 352 p.

Rossman, B. B.; Ulehla, J. 1977. Psychological reward values associated with wilderness use: a functional reinforcement approach. Environmental Behavior. 9: 41-66.

Schreyer, R.; Roggenbuck, J. W. 1978. The influence of experience expectations on crowding perceptions and social-psychological carrying capacities. Leisure Science. 1(4): 373-393.

Scott, N. R. 1974. Toward a psychology of wilderness experience. Natural Resources Journal. 14: 231-237.

Shilling, C. L.; Bury R. L. 1973. Attitudes toward recreational development potentials of non-corporate landowners. Journal of Leisure Research. 5(2): 74-82.

Stankey, G. H. 1973. Visitor perception of wilderness recreation carrying capacity. Res. Pap. INT-142. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 61 p.

Vaske, J. J.; Donnally, M. P.; Heberlein, T. A.; Shelby, B. 1982. Differences in reported satisfaction ratings by consumptive and nonconsumptive recreationists. Journal Leisure Research. 14(3): 195-206.

Vogeler, I. 1977. Farm and ranch vacationing. Journal of Leisure Research. 9(4): 291-300.

Young, R. A.; Crandall, R. 1984. Wilderness use and self-actualization. Journal of Leisure Research. 16(2): 194-160.

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The Wilderness Legacy of John Muir—150 years from Fountain Lake Farm to World Wilderness

Joseph F. Passineau and Erik Brynildson[1]

Abstract.—In their search for inspiration and guidance, advocates of wilderness preservation and environmental stewardship often turn to the life, writings, and philosophy of John Muir. As "Father of the National Parks" and founder of the Sierra Club, his contributions toward wilderness preservation continue to benefit the global community. This paper explores the 150-year-long wilderness legacy of John Muir from his formative years in Wisconsin to his accomplishments as elder statesman for conservation. The importance of his boyhood discovery years at Fountain Lake and their influence in developing an ecological world view are discussed. A World Wilderness Congress Resolution, aimed at fostering greater awareness of Muir and the protection of his boyhood home at Fountain Lake, is also considered.

The saw now severs 1865, the pith year of our oak. In that year John Muir offered to buy from his brother, who owned the home farm thirty miles east of my oak, a sanctuary for the wildflowers that gladdened his youth. His brother declined to part with the land, but he could not suppress the idea: 1865 still stands in Wisconsin history as the birth year of mercy for things natural, wild and free (Leopold, 1949).

Introduction

The river of concern for wilderness voiced at the Fourth World Wilderness Congress flows in many directions. This river pulses with the heartbeat of all nations, uniting them in a common cause—the preservation of "things natural, wild, and free." Today, the river of concern still echos the voice of earlier conservation prophets who nourish a consciousness of respect toward nature and the unifying energies of water, wind, and earth.

As one of the earliest and most vocal advocates of wilderness preservation, John Muir crusaded for a new ethical relationship between man and

[1] Central Wisconsin Environmental Station, Amherst Junction, WI; Department of Landscape Architecture, University of Wisconsin, Madison.

nature. Through his passionate pleas, forceful rhetoric, persuasive writings, and political sensitivity, he championed the cause of national parks, conservation, and wilderness. In his wake he left a powerful legacy...the wilderness legacy of John Muir.

This paper, and the Fourth World Wilderness Congress multimedia presentation it summarizes, has several purposes. First, it describes the significant role which Muir played as an advocate of wilderness and national parks. Secondly, it discusses Muir's formative Wisconsin years and their impact on his personal growth and philosophy. Lastly, a resolution adopted at the World Wilderness Congress is outlined including efforts to foster public recognition of Muir's ideals through a sesquicentennial commemoration of his birth and the designation of Muir's boyhood home at Fountain Lake as a unit within the National Park System.

John Muir's Wilderness Legacy

Muir played a significant role in the development of the American consciousness for conservation, national parks, and wilderness preservation. As "Father of our National Parks," Muir was in large part responsible for the establishment of many national parks and monuments, including Yosemite, Sequoia, Mount Rainier, and the Grand Can-

yon. As a persuasive writer and vocal advocate, Muir greatly influenced President Theodore Roosevelt. This partnership resulted in the protection of millions of acres as parks, monuments, and forest reserves. Muir's singular impact on the modern conservation movement has been recognized by numerous historians and biographers (Fox 1985; Lyon 1972; Nash 1967; Wolfe 1938, 1945). Based on the recently opened personal papers of Muir, a number of writers have gone beyond Linnie Marsh Wolfe's classic 1945 biography titled, "The Life of John Muir: Son of the Wilderness" to paint a fresh picture of Muir. Historian Stephen Fox described Muir's impact on America in his 1981 released biography, "John Muir and His Legacy: The American Conservation Movement." Michael Cohen (1984) traced Muir's thoughts and actions in "The Pathless Way: John Muir and American Wilderness." Frederick Turner (1985) summarized Muir's significance in his "Rediscovering America: John Muir in His Time and Ours."

Most of these biographies recount Muir's personal wanderings and the interplay of his world-wide experiences and activism with the personal development of his philosophy. Throughout his life, Muir drank of wilderness waters. Beginning with his baptism in the Wisconsin wilderness as a youth, he spent countless days roaming the wildest rivers, forest, canyons, and mountains of

America. His love of wilderness took him on walks and voyages through Canada, the Gulf States, the Sierras, Alaska, South America, and Africa (Arden 1973). He described many of these wilderness encounters in his own travel writings such as "A Thousand-Mile Walk to the Gulf" (1917), "My First Summer in the Sierra" (1911), "Travels in Alaska" (1915), and "Our National Parks" (1901).

The evolution of Muir's philosophical views is also portrayed in his unpublished journals which were edited by Wolfe (1938) in the book entitled, "John of the Mountains." In addition, Muir's personal spiritual journey from a fundamentalist Calvinist upbringing to a transcendentalist earth philosopher is sensitively portrayed by Thomas Lyon in his 1972 essay, "John Muir." In introducing Muir, Lyon summarizes clearly the power and significance of this visionary figure:

> John Muir's place in American History is secure. He is one of the chief figures, both philosophically and politically, behind the modern conservation movement...He helped prepare the ground for the later growth of ecological consciousness through his inspired nature writings, and in his public work he made the protection of wild nature a feasible matter of practical politics. Muir was in on the beginning of a major refinement in our civilization: away from mindless expansionism, toward the steady state...It is not too much to say that John Muir affected the direction and quality of American life (Lyon 1972, p. 5).

Muir ideology was continually reforged in the heat of battle. As he fought to protect some of America's most significant wild places, he refined his spiritual philosophy and retuned his socio-political skills. He marshalled the forces of descriptive writing, persuasive rhetoric, and political friendship to the cause of conservation. As founder of the Sierra Club in 1892, he gave birth to the environmental advocacy movement. The fight over Hetch-Hetchy stands as a landmark in the annals of conservation history, fortifying the Sierra Club and nurturing the citizenry-based, environmental rights movements. Muir's success in gaining protective status for "places of wilderness" is perhaps his single greatest contribution. His stewardship ethic toward wild places continues to affect people, places, and policies. Today Muir's wilderness legacy is engraved in the words and actions of the Sierra Club, the Wilderness Society, the Wilderness Act, the National Environment Policy Act, as well as hundreds of conferences on wilderness and global stewardship.

It is important to remember, however, that Muir's fight for Wilderness transcends the simple fight for "places of rocks and trees," for their commodity value. More fully Muir fought for intangible wilderness values. He revered wilderness as cathedrals of spiritual renewal and sought to enkindle an attitude of respect in others for the aesthetic, ecological values of natural communities.

As pointed out by Lyon (1972), Muir saw wilderness as glorified light reflecting the divine, the common truth. His vision was one of "flow and unity," based on divine faith in the oneness of earth and galaxy. He saw all things as interconnected, dependent, and whole. Based on these philosophical tenants, Muir fought for more than "places of trees and rocks" when he campaigned for the Wilderness Cause. His voice was a prophetic call to faith, that man "see correctly...the marvelous plenitude and mutuality of nature and his own perfect (divine) security within this scheme" (Lyon 1972, p. 29). Conversely, Muir felt that it was the lack of this vision and faith in the unity of man/nature that propelled society toward the commercial exploitation of wild nature. In the Muirian sense, "wilderness" is a holistic view, unifying man and nature in a common renewing spirit of oneness. In this sense, Muir's wilderness legacy encompasses far more than a diversity of protected places, the legacy symbolizes an intuitive, ecstatic world view in which man and nature are one and the same. It is symbolic.

John Muir's Wisconsin Days

Muir's wilderness vision and holistic views represented a lifelong evolution of thought and action. Much of Muir's adult life and political conservation story took place in western America during an era of cultural self-revelation. But the roots of Muir's wilderness ethic and spirituality are much older and run much deeper. By his own admission, they reached back to his Scottish origins and more importantly to his boyhood days at Fountain Lake in Wisconsin. In his 1913 autobiography "The Story of My Boyhood and Youth," he described with excitement his arrival at the Lake, with its carex meadows and fountain springs, and his baptism into the Wisconsin wilderness:

> This sudden splash into pure wilderness—baptism in Nature's warm heart—how utterly happy it made us! Nature streaming into us, wooingly touching her wonderful glowing lessons...Oh, the glorious Wisconsin wilderness! Everything new and pure in the very prime of the spring when Nature's pulses were beating highest and mysteriously keeping time with our own! Young hearts, young leaves, flowers, animals, the winds and the streams and the sparkling lake, all wildly, gladly rejoicing together! (Muir 1913, p. 53).

The Muir family lived at Fountain Lake farm until John was 17. As an energetic and adventurous youth, John enjoyed, when time permitted, the haunts in the oak-hickory forest, the carex meadow, and the crystal clear waters of Fountain Lake. He absorbed the lessons of nature, learning to swim by watching the movement of frogs. The "Story of My Boyhood and Youth" illustrates colorfully the joys and adventures of Muir and his brothers as their sense of wonder was sparked by the lakes, rivers, and hills of Wisconsin. Muir's personal growth and love of nature can be traced directly to his impressionable, youthful days in the environs of Fountain Lake.

Muir's developmental years in Wisconsin also hardened him for the tough fights of later years. As a boy, his days were filled with the hard work of carving farm fields out of wilderness. John's father, Daniel Muir, was a Calvinist taskmaster who often followed his religious convictions to extremes. He kept the Muir boys hard at work for up to 16 hours a day as they cleared the forest and extracted the thin fertility of the soil through intensive wheat farming. When John was 17, his father purchased more land and the family moved to the nearby Hickory Hill farm, to again repeat the saga of forest to field and oak to wheat. Biographers have repeatedly noted the significant role which hard work and religious fanaticism played in Muir's upbringing. In time he would use the fortitude learned through self-discipline to make him master of his own body and mind. Furthermore, he would transform his father's zealousness for religious doctrine into his own passionate faith in the unity of nature.

While on the farm, John also developed a keen mind for ideas and inventions. Although he did not go to school, he taught himself math and reading skills in the "scraps of time" between meals and chores. In his mid-teens, Muir rose at 1 a.m.

and used the 5 hours before dawn to stretch his creative mind. In those dark hours, he worked in the cold farmhouse basement, tinkering with his inventions including clocks, thermometers, and barometers. His "early-rising machine" was especially novel as it consisted of a bed-frame contraption that catapulted its occupant out of bed. It was, in fact, his inventive mind that eventually freed him from the farm. At age 22, Muir's novelties at State Fair won him regional acclaim, and an invitation to enroll at the University of Wisconsin. For 4 years, Muir followed an eclectic course of study at the university without ever completing a degree—he was fascinated by the natural sciences including botany and geology. He was later to recall in his book, "My Boyhood and Youth," that he always enjoyed learning and that he simply left "The Wisconsin University for the University of the Wilderness."

After leaving Wisconsin in 1863, Muir wandered into Canada taking up work as an inventor in a broom-rake factory in Ontario. According to some biographers, Muir's primary purpose in traveling to Canada was to evade the draft as he was a conscientious objector to the violence of the civil war. Later, while working in a carriage factory in Indianapolis, his right eye was pierced, temporarily blinding him. For 4 weeks, he laid in a darkened room. During this recovery period, he reconciled the internal struggle between his commercial success as an inventor and his love of wilderness. When his sight returned, he vowed to commit the rest of his life to the beauty of nature. Following this spiritual conversion, he embarked upon his life's passion—the exploration, discovery, and sharing of nature's lessons and wonders (Arden 1973, Lyon 1972). This period of wandering and self-study eventually took him to California where he resided for the rest of his life. Outings to the Sierras and other parts of the world continually reinforced his love

for wilderness and his dedication to its preservation.

It is clear that Muir's travels in western America were crucial to the development of his thoughts and convictions. Still in unraveling the "Wilderness Legacy of John Muir," it is important to remember that long before there was "John of the Mountains" there was also a "John of the Meadow." His passion for wilderness was born, not on the mountains, but in the meadows and springs of Fountain Lake.

The Preservation of Fountain Lake

Muir himself credits Fountain Lake and its envisions as having had the greatest influence on his personal evolution, and as the source of his wonder for wilderness. He also credits the area as the place where he first conceived the idea of the national parks, as places forever sacred and protected. According to Linnie Marsh Wolfe (1945, p. 106), Muir's attempt to purchase Fountain Lake after he left Wisconsin represents the "beginning in his thought of the national park idea."

The notion of preserving wildlands for present and future generations, a keystone of the national park concept, was further expressed by Muir in 1894 during a speech to the Sierra Club:

"Saving bits of pure wilderness was a fond, favorite notion of mine long before I heard of national parks. When my father came from Scotland, he settled in a fine region of Wisconsin, beside a small glacier lake bordered with white pond lilies. And on the north side of the lake, just below our house, there was a carex meadow full of charming flowers...

"And when I was about to wander away on my long rambles, I was sorry to leave

the precious meadow unprotected; therefore I said to my brother-in-law, who by then owned it, "Sell me the 40 acres of lake meadow, and keep it fenced and never let cattle or hogs break into it, and I will gladly pay you whatever you say!

"I want to keep it untrammeled for the sake of its ferns and flowers, and even if I should never see it again, the beauty of its lilies and orchids is so pressed into my mind, I shall enjoy looking back at them in imagination, even across seas and continents, and perhaps after I am dead."

Other champions of the wilderness movement have also shared the Muir dream of preserving Fountain Lake and its wetland meadows. Aldo Leopold, renowned ecologist and one of the founders of the Wilderness Society, also tried to preserve Muir's boyhood home. On April 14, 1948, Leopold suggested in a letter to Ernie Swift, director of the then Wisconsin Conservation Department, that the site be protected as a state park for educational purposes:

"In more general terms, such a state park should be something more than a mere stopping place for tourists lacking something to do. It might be made a public educational institution in the ecological and intellectual history of Wisconsin just as Devil's Lake ought to be an educational institution in the geological history of Wisconsin. I think the time is now right..." (Leopold 1948).

Tragically, Leopold's dream was never fulfilled. One week after he wrote the letter, on Muir's birthday, April 21, Leopold died not far away, while fighting a fire near his own beloved "Sand County" shack. As illustrated in the opening quote at the be-

ginning of this paper, Leopold recognized in his essay on the "Good Oak" the true value of Muir and the significance of Fountain Lake to the history of conservation.

Over the past 20 years, many others have sought to preserve parts of the Fountain Lake legacy. Because of the efforts of Syl Adrian, the Wisconsin Department of Natural Resources, the Sierra Club, and many other individuals, most of the 160 acres surrounding Fountain Lake are now under protective status. This includes the area known as the Muir Memorial County Park, on the west side of the lake, which is owned and operated by Marquette County, Wisconsin.

In 1972, much of the area immediately surrounding the lake was designated a State Scientific Preserve to be cooperatively managed by the Wisconsin Department of Natural Resources and Marquette County. The Sierra Club owns another 27-acre parcel northwest of the lake.

Seventeen acres of the original Muir homestead, including the building site, were recently acquired by Erik Brynildson. As a research associate for the University of Wisconsin-Madison, Department of Landscape Architecture, he researched the exact location of the original Muir homestead, buildings, and plantings. Using oral records, sketches, and photographs he reconstructed the layout of the homestead including the sites of the "bur-oak shanty" which the Muirs lived in while building the farmhouse, which eventually burned at the turn of the century. Two lilac bushes planted by John's sister, Sarah, and several large silver maples which once shaded the farmhouse still stand. Below the homesite, the springs still bubble and nourish the carex meadow which delighted the youthful Muir. Many of the indigenous wetland plants, though rare elsewhere, still inhabit the meadows.

Following the principles of "restoration ecology," the Muir Fountain Lake homesite is being restored to

conditions existing during the time John Muir explored the woods and fields (Brynildson 1987). A dense plantation of red pine has been removed and other woody invasions are being controlled. By planting native grassland seeds, the area will be restored to the oak-hickory savanna and prairie complex which flourished for centuries before the Muirs arrived in 1849. The existing structure, built on the old Muir cellar depression, is also being renovated to better fit the period.

In recognition of Muir's wilderness legacy and his lifelong passion for the preservation of his boyhood home, a concerted effort is underway to integrate the protection and management of the area. For example, along with selective cuttings, fire is being used to rejuvenate the prairie and marshland habitat owned by various entities. Still there is a great need for a more comprehensive and systematic management plan which would protect the complex natural and cultural values of the area. As with any ecosystem, the whole is more than the sum of its parts. In an effort to promote this synthesis, the authors have proposed that the entire Fountain Lake composite be designated a protected historic landscape area under the National Park Service, to be managed for its educational, scientific, and cultural values (Passineau 1987). Additionally, a "Muir National Historic District" has been proposed as a way of recognizing and protecting other boyhood haunts of Muir, including the Hickory Hill farm, Observatory Hill, the Little United Presbyterian Church, and the Fox River. The Ice Age Trail, administered by the National Park Service, also passes by the Fountain Lake property, providing an additional opportunity to highlight the many aspects of a national historic district. Based on the significance of the Fountain Lake site in fostering Muir's idea of wilderness and the national park concept, interest in these proposals are taking shape. Ef-

forts are being made to gain grass roots as well as regional and national endorsement of the plan. The Fourth World Wilderness Congress, through its symposium and resolution process, provided further impetus to this effort by providing an arena for discussion and recognition.

The John Muir Resolution

April 21, 1988, marked the 150th year of John Muir's birth. During this 150-year span of time, man has destroyed much of the world's most precious wilderness. In this same period, the seeds of a wilderness land ethic have grown. At the Fourth World Wilderness Congress, participants from over 60 nations united to voice a river of concern for wilderness places and wilderness values. In recognition of John Muir's wilderness legacy, the following resolution was unanimously endorsed by the Fourth World Wilderness Congress (1987).

Resolution 36.—John Muir Commemoration and Memorial

The philosophy of John Muir has come to be widely recognized and accepted as a monumental inspiration to a diversity of people working on behalf of global unity and wildlands protection. He is officially known as the "Father of our National Parks," and was the founder of The Sierra Club. His contributions toward wilderness preservation continue to benefit humankind and other life.

John Muir credited his boyhood homestead, known as Fountain Lake Farm in rural Montello, Wisconsin, as having had the greatest influence on his personal evolution. Muir further credited Foun-

tain Lake Farm as the place where he first conceived the idea of our national park system.

The Fourth World Wilderness Congress endorses:

1. The official national designation of April 21, 1988, as the 150th Anniversary of John Muir's birth.

2. The recognition and subsequent designation of Fountain Lake Farm and the Muir Memorial County Park in Marquette County, Wisconsin, as being a historically significant landscape of cultural importance and worthy of national protection as a unit within the National Park system.

3. The release of a symbolic commemorative stamp by the U.S. Postmaster General's Office signifying the 150th Anniversary of John Muir.

4. The creation of a non-governmental conservation organization that will promote this action and emphasize, through education and advocacy, Muir's view of holistic ecology.

Sponsor: Symposium on Use of Wilderness for Personal Growth, Therapy and Education.

Follow-up Responsibility: Joseph F. Passineau, Erik Brynildson, and Harold Wood.

The Fourth World Wilderness Congress and its resolution process served as an important catalyst, reaffirming the significance of Muir and his message. Since the passage of the above resolution in September 1988,

most of the action components have been achieved. Following is a brief summary of action taken in this regard.

National commemoration of John Muir's birthday.—A Joint Resolution of Congress (Senate 245) was adopted and a Presidential Proclamation was signed by President Reagan designating April 21, 1988, as the 150th Anniversary of John Muir's birth. In related fashion, official proclamations were also issued by the Governors of Wisconsin and California. Many commemorative events were also held in these and other states during the week of the sesquicentennial. The National Park Service issued a calendar of events highlighting over a hundred John Muir related activities at many of its parks including Yosemite, Sequoia, Glacier Bay, and the John Muir Historic Site. Sierra Club chapters and other environmental organizations brought recognition to the Muir Conservation Story through local commemorative events and environmental awareness activities for schools and youth organizations. Hundreds of newspaper and magazine articles focusing on Muir and his impact have also been published.

National protection of the Muir Fountain Lake site.—Efforts to secure national protective status for the Fountain Lake farm have been advanced. The Marquette County board officially petitioned the National Park Service to consider the area as a national historic site. Senator Robert Kasten (R-Wisc.) has also encouraged the U.S. Secretary of Interior to study ways to preserve the site. During the Wisconsin commemorative event at Fountain Lake, the National Park Service, through a presentation by regional director Don Castlebury (1988), officially endorsed the concept, and a plan involving the National Park Service is being prepared.

Commemorative stamp.—Efforts to encourage the U.S. Postmaster General's office to release a com-

memorative stamp failed due to insufficient lead time. A stamp commemorating Muir's conservation efforts was, however, previously released in 1964, and a Sierra Club centennial stamp, due for release in 1992, will likely depict Muir.

Muir Conservation Organization.—The effort to create a non-governmental conservation organization to promote the above actions and Muir's view of holistic ecology, through education and advocacy, has had several results. Organizations with an interest in Muir, such as the Sierra Club and the John Muir Memorial Association, have used the Muir sesquicentennial to promote their individual and cooperative efforts. To further efforts at preserving the Fountain Lake environs, the Wisconsin Muir Foundation has been formally established.

Summary

John Muir played a singularly important role in the development of the conservation movement in America. As "Father of the National Parks" and "Son of the Wilderness," his actions have significantly influenced public attitudes and natural resources policy. As founder of the Sierra Club, he championed the cause of wilderness preservation and prepared the ground for modern environmental advocacy and activism. Through his words, writings, and actions, Muir has changed the course of world events. He has left for following generations a rich legacy of protected wildlands.

Equally important, Muir also left a "symbolic legacy of Wilderness philosophy" grounded in the stewardship ethics of caring for the earth. His philosophical orientations offered an alternative world view, one which exchanged the exploitative man-centered perspective for one of ecological unity and spiritual renewal. His life journey was one in search of personal growth, self-therapy, and edu-

cation. Throughout his life, his search for "cosmic truths" lead him to wild places.

As a youth in Wisconsin, he loved the magic of Fountain Lake. It kindled in him a lifelong sense of wonder for nature. Throughout his travels, Muir was reminded of his formative youthful days and the powerful nature lessons of his Wisconsin wilderness. In many ways, Fountain Lake can be seen as the birth place shaping Muir's ethical commitment to earth stewardship. Although he championed the preservation of vast areas of western wildlands, Muir was unsuccessful in his personal attempts to protect the beloved lake and meadows of his youth. Today, in the year of Muir's 150th birthday, there is renewed hope. A growing tide of interest in Muir and his ideals may eventually lead to the fulfillment of Muir's own dream—the preservation of the ecological beauty and spiritual wilderness values of Fountain Lake.

Literature Cited

Arden, H. 1973. John Muir's Wild America. National Geographic. 143(4): 433-461.

Brynildson, E. 1987. Restoring the boyhood place of John Muir. Personal paper.

Castlebury, D. 1988. National Park Service representative presentation at Muir commemorative activities; 1988 April 15; Madison, WI: University of Wisconsin. 1988 April 16; Marquette County, WI: Muir Memorial Park.

Cohen, M. P. 1984. The pathless way: John Muir and American Wilderness. Madison, WI: The University of Wisconsin Press.

Fox, S. 1985. The American Conservation Movement: John Muir and his legacy. Madison, WI: The University of Wisconsin Press.

Leopold, A. 1948. Copy of a personal letter to Ernie Swift. April 14, 1948.

Leopold, A. 1949. A Sand County Almanac. Oxford Press.

Lyon, T. 1972. John Muir. Boise State College Western Writers Series Number 3. Boise, ID: State College: 5-48.

Muir, J. 1901. Our national parks. Boston, MA: Houghton Mifflin.

Muir, J. 1911. My first summer in the Sierra. Boston, MA: Houghton Mifflin.

Muir, J. 1913. The story of my boyhood and youth. Madison, WI: University of Wisconsin Press. (1965 ed.)

Muir, J. 1915. Travels in Alaska. Boston, MA: Houghton Mifflin.

Muir, J. 1917. A thousand-mile walk to the Gulf. Bade, W., ed. Boston, MA: Houghton Mifflin.

Nash, R. 1967. Wilderness and the American mind. London: Yale University Press.

Passineau, J. 1987. Personal letter to W. Penn Mott, Director, National Park Service. August 29, 1987.

Turner, F. 1985. Rediscovering America: John Muir in his time and ours. San Francisco, CA: Sierra Club Books.

Wolfe, L. M., ed. 1938. John of the mountains: the unpublished journals of John Muir. Boston, MA: Houghton Mifflin.

Wolfe, L. M. 1945. Son of the wilderness: the life of John Muir. New York: Knopf.

The Use of Wilderness for Education

Karlyn Atkinson-Berg[1]

Abstract.—Throughout history, stories, beliefs, and attitudes about wolves and wilderness were contradictory but primarily had a negative impact on the wolf. Wolves simultaneously, during this diverse relationship with humans, also became a symbol of wilderness. A proposed International Wolf Center will impart factual information about the wolf, its ecosystem, and our heritage of attitudes toward wolves. By tracing through history and describing the Wolf Center's programming and field trips, including the "Wolves and Humans" exhibit now touring the United States, this presentation shows how such an educational facility can benefit the future, encourage humans to coexist with wolves and other animals, and bring greater appreciation of the wilderness environment.

Wolves, and predators in general, historically have been misunderstood and feared, but they have also fascinated mankind. Humans and wolves have had a long, close, and diverse relationship throughout time. Few animals have exerted such a powerful influence on the imagination as the wolf. Through the ages, wolves have been of symbolic significance in human cultures worldwide, and today, public interest in the wolf is very high. An increasing number of people revere the wolf as an intriguing animal and a symbol of undisturbed natural wilderness.

By tracing through history and accumulated literature, we can examine how different cultures viewed the wolf, how these diverse attitudes have evolved, and how these attitudes historically have significantly affected the wolf.

We will see that not all cultures viewed wolves negatively. However, in those that did, legend and folklore, by reinforcing prevailing negative beliefs, may have also encouraged the extraordinary effort to eliminate wolves from most of their original range. Beliefs, fears, and attitudes expressed through history still abound and continue, in spite of contrary scientific knowledge, to determine the future of the wolf. We need to comprehend this heritage and the contradictions of our perceptions in

[1]*Committee for an International Wolf Center, Bovey, MN.*

order to coexist not only with the wolf but with other creatures as well.

The effort to achieve a better understanding of the complex problems of humans coexisting with a predator that traditionally has been viewed as an enemy presents a challenge. To meet this challenge, an International Wolf Center has been proposed. It will serve as a major educational facility providing information about wolves and their wilderness environment. A cornerstone of the Center will be the highly acclaimed "Wolves and Humans Exhibit" produced by the Science Museum of Minnesota and currently on traveling display in the United States and Canada.

The idea to build this center is also representative of how the relationship between man and wolf has evolved. The best way to understand that evolution is to start the story as far back as possible.

Wolves and Humans: The History

Emerson (1836) wrote that nature reflects wisdom and is loved by what is best in us. Nature, as a powerful force on man's imagination and soul, affects his ideas. When we look to history for understanding of our relationship with the wolf, we find the powerful force, the emotion of fear, the most prevalent motif. The terror of becoming the physical victim of predation, as well as being spiritually devoured, is a major fear in many

cultures. Humans' hostility toward wolves was, and still remains, founded in fear. Fear of competition for prey species and fear of wolf depredation of our livestock are predominant anxieties. Roget's Thesaurus (1963 ed.) even uses "cry wolf" as a synonym for the verb form of the word fear. Only a sprinkling of positive affiliation kinships involving man and wolf, outside of the Native American experience, have been recorded.

Man's first association with the wolf occurred when early man was himself a carnivore and a group hunter like the wolf, dependent on his predatory skills for survival; man and wolf may have even coexisted in an alliance advantageous for both. Wolves probably benefited by scavenging leftovers from man's camp while perhaps serving unwittingly as "guard dogs" for man. Both may have afforded satisfaction from the companionship as well. This association eventually must have resulted in man's somehow taming the more social of these canine neighbors, with these wolves eventually becoming man's "best friend," the dog, apparently as early as 13,000 B.C. or before (Mech 1970). Despite this early relationship with wolves, the partnership was limited. While the dog remained popular, man also developed an increasingly negative attitude toward the wild ancestor of the beloved dog. When man began to domesticate other animals, he came to view the

wolf as a highly efficient competitor threatening his livestock.

Two possible cultural avenues exist for the wolf/human relationship to follow. People living within the wilderness or a natural environment coexist with nature and even with predators like the wolf. People who have left nature or become "civilized" have set themselves apart from, but also against, nature including the wolf. We also begin to see man no longer thinking of himself as a predator but fearing and denying the existence of the beast within himself.

Thus, eventually man became further separated from wild creatures and the wilderness. The Babylonian Gilgamesh text (c. 2,500 B.C.) described nature as hostile to man, and man as unable to "re-establish dominance over the earth" (Gardner 1984). Genesis 9:2 proclaimed "that man shall be estranged from nature and a cursed adversary of animals." Man no longer communicated within and with his environment. Jewish historian, Josephus (c. 66 A.D.), suggested that man actually lost his ability to communicate with animals when man was thrown out of the Garden of Eden, a fate he considered man's penalty and loss. From that prescribed time forward, there seems to be a symbolic and real conflict between man and wilderness, including the wilderness creatures. Through agriculture, man set himself to the task of regaining the "Garden of Eden" from the wilderness, and regaining the land from the evil clutches of the devil. By cultivating and "civilizing" the wilderness chaos, man moved from his wild past to become a manipulator of his environment.

Having chosen the second route, most humans no longer felt an interrelationship with nature, but instead man came to view himself as owner of all, with creatures existing to serve him. Man not only set himself apart, he appointed himself above nature and strove to overpower it. To avoid

being conquered by nature, he set out on a quest to conquer and dominate it. Still today, the forest, uncontrolled by man, evokes for some an anxiety arising from an understanding of our ultimate inability to dominate nature. Creatures that did not serve man were expendable, and those that would not submit were evil. The wolf was, and is, a symbol of the wild that could not be made subservient.

Among some of mankind's oldest written accounts, such as the Gilgamesh text (c. 2,500 B.C.) from Babylonia, wolves ranked among the four worst evils that man would confront after the great Flood: the lion, the wolf, famine, and plague.

Historically, there is a wealth of narratives pertaining to wolves, devouring, and death. These depredations result not only in physical death but the spiritual ravaging and death as well.

The wolf, like the devil, it is said, is always looking over the human race (White 1960). His yellow eyes are lit by the devil, capable of possessing you with mere eye contact. The wolf's wide, ferocious, gaping mouth is often shown as the jaws of Hell. The Mongol demon, Jagasstai, whose being was a treacherous mountain path, was also served by wolves (Ossendowski 1922). The wolf is depicted in the bible as devouring, like gentle lambs, the children of God (Luke 10:3). The idea of spiritual death is again seen in Finnish beliefs that unbaptized children roam the earth in the form of wolves (Clarkson 1975). The wolf is commonly portrayed as ravaging the innocent with his lustful appetite and devouring virtuous young women. This certainly led to many cliches regarding men as wolves who "wolf whistle" at beautiful women. On the other hand, prostitutes were also called wolves because they consumed their lovers. The She-Wolf of Rome, said to have reared Romulus and Remus, was supposedly a prostitute (the Italian word for She-Wolf

and prostitute is the same, Lupa). Other versions regard the She-Wolf as a totem and symbol that diplomatically united tribes into present day Rome (Boitani, personal communication). The Scandinavians believed that hungry wolves pursued the sun and moon. If they were ever to catch and devour these spheres, light would disappear, or if they fatigued and quit the chase, the natural procession of time would cease (Wax 1969).

Another way of being devoured by wolves was to be transformed into one. Impious Lycaeon, who served Zeus a dish of human flesh, was turned into a wolf along with his sons, and they were considered the first werewolves (Ovid 43 B.C.).

The wolf transformation by virtue of wearing the wolf skins, for most cultures, meant one could achieve the attributes of the wolf. For some groups, this had strong advantages and many rituals and ceremonies would include the wearing of wolf pelts. For many Old World pagan cultures, the quality desired and obtained from wolves was war-like ferociousness and cunning. The Scandinavian "beserkers" were often described as roaring, wolf-coat warriors, "howling and gnawing" at the edges of the Elizabethan world (Turner 1980).

Lest we think that this was imagery used only in ancient times, we can note that Hitler called himself "the wolf," his place of war planning his "wolf den," and his U-Boats the "wolf pack." Interestingly, the military procedure followed by the U-Boats can easily be seen as modeled after wolf-hunting strategy.

Colonists left the malicious Old World woodland wolf demons but came to the New World with centuries of tradition based on fear. Man feared the actual wrath of nature and wolves as its symbol. In the New World, the Puritans encountered a vast wilderness. They described their desolation as being surrounded by "howling wolves, howling Indians

and howling wilderness, a land inhabited by hellish fiends and brutish men that devils worshiped" (Wigglesworth 1664, in Bergen 1980). The New World battle was even more fearsome for they believed they were truly surrounded by wolves of all kinds. North America was said to be the last stronghold of the devil. For the Puritan, the devil continuously threatened their sanity and piety. Cotton Mather (1702) stated that the people should beware of the "evening wolves," the "rabid," and the "howling wolves of the wilderness which would make havoc among you and not leave the Bones till morning." These beasts of the devil's domain would seek to lure you into their dominion, causing you to lose all bearings and rational, civilized ways, drawing you into the wilderness forever. Stiff penalties were enforced for those who moved too far into the wilderness ahead of "civilization." They were transgressors, said to be daring the devil and courting doom. Indians were declared the "faithless fallen enemy." Bounties were instituted on wolves and later on Indians. The head of a bountied wolf was proudly hung on the door of the Sunday Meeting House. There it also served as a protection against witchcraft.

Early American literature is abundant in tales of courageous acts in the conquest over the enemy devil and wolf. But these stories become even more fascinating when observed in contrast to the Native American stories and beliefs. Here we see not stories of fear but an understanding of a vital force linking individual man and animal spirits and the continuum of all living spirits. This was man taking the first avenue continuing to live in harmony with nature, to be in touch with the wilderness spirit. Through the animal mask, Native Americans would not merely symbolize the animal but would "stick ones head through" to the other spiritual side and acquire a power; that power that exists in the

air, land, sea, and all around us. The power of the universe (Ray 1967). Transformation for the Native American was not the evil soul possession by the devil but a merger, a shape-shifting of the animal's spirit with that of man's. It often included the belief that all animals possessed dual forms, a human form and a soul.

The character of animals was portrayed in dance, ceremony, and art, with much ritual importance. The wolf was depicted in masks, totems, and in ceremonies as well. The wolf was an important part of many tribes lineage, history genealogy, and kinships traditions. Wolf pelts and wolf heads were worn in transformation ceremonies and other ritual dances by many tribes, for example, at the Eskimo Messenger Feast.

Native American tribes such as the Cheyenne and Pawnee called themselves the wolf tribes and their scouts were called "wolves" (Grinnell 1923). They used wolf and dog vocalizations to signal the approach of enemies or allies.

While the European feared being devoured by wolves, the Native American considered it an honor to be devoured by wolves and ravens, thus returned naturally to the ecosystems from which all life comes.

The wolf was studied and its attributes respected; this knowledge was absorbed into practical Indian life. Hunters wore wolf pelts when approaching the buffalo knowing that wolves could mingle with the herds in close proximity. A hunter dressed as a wolf could increase his chances of getting a buffalo compared with approaching undisguised. He also used the wolf to catch eagles. By placing a stuffed wolf to look like it was eating meat he would entrap the eagle that landed in an attempt to scavenge the meat from "the wolf" (Mails 1972).

Generally the Native American traditions pertaining to the wolf are based on kinship motifs and observation and respect for living things. A number of wolf kinship stories exist

in other cultures such as the Etruscan, Celtic, Christian, and Indian heritages. These usually involve accounts of gods, saints, and human infants being raised by wolves. Some claim to be factually documented cases. To consider how possible these claims may be we must acknowledge that although wolves are ideal parents in the animal world, the wolf lifestyle would be quite difficult for a human infant to survive (Mech 1970).

Kinship was not a theme employed in the westward expansion of white man's civilization in the New World. The westward movement, in many ways, might be described in the words of the Scandinavian poem Edda Voluspo (also used to describe the fate of Hitler's Empire)...It was a "wolf time...when no man on earth his fellow man shall spare." It was a time when most natives who stood in the way of "civilization" were pushed further and further back. It was a continued effort to conquer new terrain, not necessarily for God but certainly for the white man.

An expedient and profitable way to eliminate the wolf and the Indian was by removing their means of survival, their prey. The buffalo thus became a prime target. While the extensive waste and remains of slaughtered buffalo provided wolves with a wealth of meat for a time, eventually their natural prey disappeared; the buffalo herds were replaced by the settlers' cattle. The wolf, an opportunist, adapted and became a proficient hunter of cattle. An intense chapter in wolf annihilation was opened; wholesale extermination measures were undertaken (Young 1944). The cowboy could earn 2 weeks' wages ($5) by roping wolves. This became a favorite past-time for cowboys as well. Not all wolf hunters were cowboys and "mountain men" but some were pioneer families. Most people do not realize that many of the early settlers were not ranchers or agriculturalists but "wolfers" who went west to profit from this trade.

But the most effective and final blow for western wolf populations was the use of poison. Similarly "germ warfare" was so used to eliminate Native Americans. Disgracefully, one of the concoctions for strychnine wolf-poison was called "Indian Whiskey." Wolf bounties were continued in all the States. In Minnesota, the last state with the largest viable wolf population in the lower 48 states, the bounty was only repealed in 1965. Livestock depredations remain a subject of controversy today.

To put the actual threat in perspective note that there are roughly 12,230 farms in wolf range in Minnesota, habitation for a population of 1,200 wolves. From 1977 to 1980, the highest cattle losses claimed were .45 per 1,000 available; and in 1979, the highest sheep losses claimed were 1.18 per 1,000 available. In 1980, 40 complaints were filed resulting in 25 claims verified on 15 farms. Approximately 30 wolves are verified as depredators each year and are killed under the Federal predator control program (Fritts 1982). This is a low number of wolves involved and a small percentage of losses, especially considering how many wolves actually live on farms yet cause no losses.

Another subject of controversy today is the killing of wolves to increase wild prey for man to hunt, while the reduction or curtailment of man's hunting activity is not undertaken. The question can be asked if modern wildlife management also is simply a matter of man dominating and manipulating nature to enhance the "good" species, that is those we want for ourselves. The wolf has always been cast in the "big bad" category in folklore but has also been thought of in real-life as one of the "bad guy" species. Some question how and if wolves benefit men. Some feel their only value is as a pelt, for others they have no merit at all. From the days of Ghengis Kahn to aerial wolf hunting of modern times, wolves have long been the treasured

subject of the ritual hunt, and a symbol of man's machismo if he can overpower one.

Wolves kill whitetail deer, moose, beaver, some livestock, and sometimes even dogs (Mech 1970). This predation alone inspires the most intense emotions from people on either side of the wolf controversy. Anti-wolf forces think of the wolf as a destructive wasteful hunter, and resent the wolf as a hunter of "man's" deer. Many speak of wolf predation as though the menacing wolf lurks about in conflict with nature. (Many pro-wolf people on the other hand prefer to deny or minimize the wolf's predatory lifestyle, and prefer to see it as a jolly dog of the woods.)

An attitude that has not yet been abandoned is the unwillingness to accept the existence of other intelligent competitive species like the wolf. Hunters do not perceive humans, when hunting as a group, as unfair or malevolent to prey. However, because the wolf is an intelligent group hunter, it is considered despicable by many people. Perhaps discerning the wolf as a group hunter is especially heinous to people because it makes man himself feel much more vulnerable to wolves. Predation is often mistakenly described as violent behavior and even as rape of the prey. These ideas harken back to tales of the werewolf devouring the innocent.

As we can see, our actions and attitudes toward animals have often been motivated by philosophical and religious assumptions we have about man's place in nature and the differences between man and animals. When we hold animals to be subservient to ourselves, we can delude ourselves as being less responsible for our actions against them.

Predation is one of the most indispensable, life-supporting transactions within the environment, a part of the fundamental law of ecology that everything is interrelated. Nevertheless, that the wolf has a vital ecologic role should not be taken as the sole

or prime motivation to "justify" the preservation of the wolf.

Man and Wolf Coexisting

Does this historic legacy have bearing on wolf/human interactions today?

Changing attitudes, philosophies, and ethics involving predators and wilderness are apparent when comparing historic accounts with trends of today. A new chapter is being written as environmental awareness, conservation of endangered wildlife, and a land ethic are influencing the current perception of our responsibility toward other living things. Learning how to coexist may mean sharing, protecting, or even relinquishing our use of certain habitat.

How to accommodate protection of environments and endangered species with the economic survival of rural communities presents a dilemma and an additional challenge.

Northern Minnesota, home of the Boundary Waters Canoe Wilderness and the Eastern Timber Wolf, has an economy which has long been based, at least in part, on tourism. This vast northwoods wilderness and its unique canoe trails will become the "global headquarters" of another wilderness experience. The wolf is probably Minnesota's most unique resource, and it has great allure for many in-state and out-of-state tourists. The creation of an International Wolf Center will improve the economic base for the local community and foster a better relationship with the surrounding wilderness and its wild creatures, especially the wolf.

Major goals of the International Wolf Center are to (1) impart factual historical and scientific information about the wolf, (2) heighten the public's awareness of the predator's important role in the wild through exhibits, programming, and field trips into wilderness wolf country, (3) consider how humans can coexist with

wolves, and (4) broaden our understanding of the total ecosystem.

The most important aspect of the center will be that it will permanently house the highly acclaimed Science Museum of Minnesota's "Wolves and Humans Exhibit" currently on tour throughout the United States and Canada. The exhibit, which has already been viewed by 1.5 million people, encompasses a variety of perspectives, and will set the tone for the proposed wolf center as an educational facility. Although the exhibit's original focus is on wolves in Minnesota, it will expand to provide a more international scope. The center will also accommodate additional permanent and temporary wildlife, photographic, and art displays. In addition, the center will offer diverse and dynamic programming including workshops, classes, and traveling exhibits. Field trips year-round will feature unique aerial and ground expeditions to see wolves, their tracks, and their kills. Trips to "howl" to wild wolves and hear them respond will add another exciting and unparalleled experience.

So visitors can learn more about wolves and observe the behavior of this elusive animal, a captive pack in natural habitat will adjoin the Center and can be viewed from two observation floors, plus with video monitors. The grounds will be landscaped with natural flora, and natural trails are also planned.

The Center will act as a repository for wolf specimens and historic and scientific literature, and provide a location for international wolf and wildlife symposia and meetings. Topics regarding global environmental concerns should become part of the programming, making the Center truly an important international project.

It is hoped that through education the Center can benefit the future, encourage humans to coexist with wolves and other animals, and bring greater appreciation of the wolf and its wilderness environment. The need for this consciousness, however, surpasses the basic "save the wolf" ambition.

Albert Schweitzer (1969) asserted that an ethic that does not consider our relationship to the natural world is incomplete. Thoreau (1851) reaffirmed our interconnectedness to the wild when he wrote, "In Wildness is the Preservation of the World." Perhaps the Center can help people rediscover that kinship with the wild. The howl of the wolf which has haunted man as a death chant may then instead communicate a message to us about the wonderful vastness of life in nature which encompasses us all.

Literature Cited

Bergon, Frank. 1980. The wilderness reader. New York: Mentor Books. [The Frontispiece quote by Wigglesworth (1664).]

Boitani, Luigi. 1987. On the side of the wolf. Rome, Italy: Department of Animal Biology. Personal communication.

Clarkson, Ewan. 1975. Wolf country: a wilderness pilgrimage. New York: E. P. Dutton.

Emerson, Ralph Waldo. 1836. Nature, ESSAYS. London: J. M. Dent and Sons Inc. (1930)

Fritts, Steven. 1982. Wolf depredations and livestock in Minnesota. Resource Publ. 145. Washington, DC: U.S. Department of Interior, Fish and Wildlife Service.

Gardner, John. 1984. Gilgamesh. New York: Alfred Knopf.

Grinnell, George Bird. 1923. The Cheyenne Indians. University of Nebraska Press.

Mails, Thomas E. 1972. Mystic warriors of the plains. New York: Doubleday.

Mather, Cotton. 1702. Magnalia Christi Americana; or the ecclesiastical history of New England. London. In: Major writers of America. New York: Harcourt, Brace and World, Inc. (1962)

Mech, L. David. 1970. The wolf: the ecology and behavior of an endangered species. New York: Natural History Press.

Ossendowski, Ferdinand. 1922. Beasts, men, and gods. New York: Blue Ribbon Books.

Ray, Dorothy Jean. 1964. Beaver, Kauwerak lost village of Alaska. Seattle: University of Washington.

Schweitzer, Albert. 1969. Reverence for life. New York: Pilgrim.

Thoreau, Henry David. 1851. Walking. In: Major writers of America. New York: Harcourt, Brace and World, Inc. (1962)

Turner, Frederick. 1980. Beyond geography: the western spirit against the wilderness. New York: Viking Press.

Wax, Rosalie H. 1969. Magic, fate and history: the changing ethos of the Vikings. Coronado Press.

White, T. H. 1960. The bestiary: a book of beasts. New York: G. P. Putnam's Sons.

Young, Stanley P. 1944. The wolves of North America. New York: Dover Books.

Finding Our Way with Play: Lessons from Wilderness Playgrounds and Wildlife Playmates

O. Fred Donaldson[1]

Abstract.—A genuine experience of wilderness requires participation of all our senses and a way of knowing more holistic than analytic. A playful approach to wilderness is a major paradigm shift away from our perception of wildlife as prey or specimens and wilderness as scenery or resources. Play offers us a unique opportunity to develop nonverbal interspecific communication without destroying wilderness. Play is a powerful force in both animal and human behavior. But for us to truly play will require a major paradigm shift away from our contest approach to each other and the world. The playful mind is an ecological mind offering a unique opportunity to develop nonverbal interspecific communication.

Ye blessed Creatures, I have heard
the call
Ye to each other make: I see
The heavens laugh with you in your
jubilee;
My heart is at your festival,
My head hath its coronal,
The fulness of your bliss, I feel-I feel
it all.

—William Wordsworth

*"Ode on the Intimations of Immortality
from Recollections of Early Childhood"*

Play comes with life. Play belongs to the child of summer within each of us; a time, not of ownership or competition, but of belonging. A time uncomplicated by either freedom or security, since we play unaware of either. A time when we sense more than we know. A time when our surroundings—animals, trees, and the earth—are sensate.

This article is about my wanderings in search of playmates and playgrounds. This is a lifelong pilgrimage; consequently, I present here no finished thesis, rather something to play with and wonder about. I offer this perspective not for such contests as dissection and debate, but playfully for contemplation and reverie.

[1]*American Parks and Wildlands, Big Sky, MT.*

What Isn't Play?
Play to Win and Every Victory is a Funeral

Mind plays an essential role in the functioning of the universe. Reality in nature is not just what we experience but what we learn to experience. The symbolic systems of culture transform physical reality into experienced reality. Moving, touching, even seeing may be acts of violence, of personal aggression, of contest, or they may be acts of tender affection, trust, or play. American culture, for example, with its rigidly defined principles of contest and its patterns of winning and losing, presents a strongly categorized view of the individual's relationships with his or her environment. We have learned, for example, to experience each other, wilderness, and wildlife as competitors. This is an unconscious assumption that we assume to be natural and morally right. This assumption appears so obvious that we are unaware of what we are assuming, because no other way of expressing our reality occurs to us.

Our translation of play as contest is a product of our culture. Individualized, our contests lead to numerous stress diseases, accidents, and even suicide. Collectivized, our contest orientation avalanches into random cruelty, persecution, and war. This egoistic distortion of humanity is what we have labeled as human nature.

As contestants we remain cut off by both knowledge and fear from the heart of experiencing life. We are like the infant who will reject the nipple of a severely anxiety ridden mother even though his or her physical and emotional survival depends on this nourishment (Pearce 1974, p. 21). We have institutionalized our fear of life into a myriad of contests, which are fortresses built to hold what we must not lose. Remote from our playful beginnings, and living by complicated artifice, we have come to survey our planet with apprehension and interact with our fellow creatures with fear. We, thereby, distort the whole and see only parts. There seems to be some indistinct notion that we all gain in our rush to contest, but when the applause quiets and the frenzy ceases, it will be perceived that only a few win and those only for a time.

Play and contest are different realities, not simply the same reality experienced in different ways. In the normal course of experience, we learn to adjust to contest relationships by suppressing our inner need to trust life. As a contestant, the individual human is incapable of interacting holistically with man and nature. The result is a schism in the in-

dividual consciousness; what Laurens van der Post (1987, p. 50) termed "the human being split in his own nucleus." Contest is a confusion of wholeness and separateness. Cut off by fear from the heart of our own experience, we become distorted fragments of who we were meant to be. This leaves us unprepared to be caregivers for one another and our environment. Learning to be a contestant is learning to sacrifice life for no life at all.

To engage in contest requires persistent violence. The more dependent upon this contest system we become the more vulnerable, less flexible and less resilient we become. We have not understood that in our quest to conquer the earth and one another, the longer we win the more we lose. Our proclivity to contest has reached a terrifying climax. The notion that one can win with no one losing is absurd, vicious, and impendingly suicidal. The dangerous assumptions are that winners can be considered apart from losers and that winning may be conceptually separated from losing. We must begin to understand that when we "play to win" every victory is a funeral.

Since the work of Johan Huizinga (1950, p. 105), who wrote that "whatever its form competition is always play," observation has guided researchers to see only the utility of play, which has simultaneously limited their vision. There is extensive scientific literature on both human and animal play, but it is terribly flawed because, as traditional people knew and my experience shows, play discloses itself at a depth inaccessible to observation.

As contestants we see nature as we see ourselves; we approach life as a "survival of the fittest." We must abolish the institutions of contest and replace them with, not new institutions, but with a new way of thinking. As players, for example, "survival of the fittest" would mean, as Lewis Thomas suggested, "those fitting in best with the rest of life."

What is Play?
Play is the Trust of God in all Life

We need another wiser and child-like concept of interaction. The question is whether or not we have the wisdom to formulate a newly evolved process based on new assumptions. I suggest the paradigm of play to return to our innermost resource, one that unites rather than divides.

The physicist Freeman Dyson (1979, p. 17), at age 15, experienced such an insight which he called Cosmic Unity. Cosmic Unity said, "There is only one of us. We are all the same person." Such a concept is murmured at the conclusion of the pipe ceremony of the Plains Indians: We are all related (Highwater 1981, p. 189). A similar hope is imagined in the Paiute Ghost Dance Song. Referring to the coming of a new age, this song predicts a peaceful world when "the snow earth comes gliding" driven by a whirlwind (Eaton 1974). Russell Schweikart, Edgar Mitchell, and other astronauts who experienced earth from space saw a unitary world without boundaries. Hermann Hesse (1972, p. 5) wrote that "nothing on earth is more disgusting, more contemptible than borders." Our thinking and behavior haven't caught up with the ecological reality understood by these explorer-thinkers.

To realize the benefits of play, we need a substantially new manner of thinking about our relationship with the world. Play has survival value much broader in scope than we have heretofore imagined. This is not the survival of humans in contest with their fellow creatures; it is the survival of humans in kinship with their fellow creatures. Play seeks to answer the question, "Who am I?" not "Who will win?"

The Play Matrix:
Played with by the World Am I

The first lesson to be grasped: play is nothing if not axiomatic; it neither allows nor needs any proof or any explanation; it can only be accepted for its intrinsic truth. Play is within you or it is nowhere at all. There is no why in play, only trust. If I am faithful to this trust, I may arrive at some glimmering of the "why."

Quite frankly, most of us have had little if any training in such a way of interacting. Play requires that we expand ourselves trustingly into the unknown. But this is exactly what we cannot do because we have no cultural supports to lean on, no collective experience that makes play seem real because it is lived and shared. And yet we were all born within such a context. As Frederick Leboyer (1976, p. 90) has put it, "The child is playing! And not ten minutes have gone by since it was born." The womb is our first playground, offering us a source of love, trust, energy, and possibility. Our individual mind/heart plays with the universal mind/heart as if connected. The result is a harmonious rhythm so powerful and instantaneous that it is impossible for the brain to think about it. I would say that we were playing with the universe, were it not equally true that the universe is playing with us. This is play before culture manipulates and distorts it. It is the fluid balance of both mind and body. There is no thought of grasping, no use of energy, no attachment to fear or desire.

Play is an ecological process in which one blends with others in a larger tapestry. The essence of play's vitality, like that of an ecosystem, lies in the unity between person and nature, as well as between person and person. It is a balanced complexity of interlocking relationships arising only in a form of action that does not attempt to fragment the whole.

The universe is a playground full of playmates. Play is not a matter of effort but a gift of grace; it issues from the preconscious intuitions of one's whole being. There is nothing to be afraid of, no awards to win or egos to lose. To play is to enjoy a

mystery, not solve it. The secret of play is that there is no secret. It now seems clear to me that the core of the play relationship is the knowledge that all life is of one kind.

Play is a relationship, a form of physical and psychological bonding in which communication, interaction, and an intuitive rapport functions outside of culture and ordinary rationale. Play functions as a matrix for players that offers three things for the involved participants: a source of possibility, a source of energy to explore that possibility, and a safe place within which that exploration can take place (Pearce 1977, p. 16). The same three things are necessary to form the matrix of play: trust provides the energy source, playmates the source of possibility, and playgrounds the safe place.

I have found playmates in wolves, coyotes, dolphins, and children not for thrill seeking purposes or to see if I can do it. I play only with those who want to play with me. I do not play all the time, nor do I expect it of animals or children.

When I was just beginning to learn the signals of play, my exuberance often deflected the cues children were giving me. Consequently, I would proceed with the next step when they had given me the signal that they were not interested. Kindly but firmly, Anthony or Etienne would say, "Not now, Fred." I no longer need to be told; I have learned to sense when to continue and when to walk away.

There are times when I begin to enter a wolf enclosure and realize that either the wolves are not interested in play or that I am not ready. In either case, I turn around and leave. In the wild, I am equally aware of the animal's disposition.

Trust: The Energy Source of Play
"Trust is Power"—Lao-tzu

In play we are closest to the wonderful, mysterious integrity governing our universe. If we wish to play, then we must trust a wider world; then we will feel in our body and understand in our spirits the power and grace of play. The best place to store one's surplus trust and love is with those currently in need. By sharing out of our common needs and sufferings, we may surprise ourselves with the strength of our bonds. Play is, in the fullest sense, a different perception built up slowly into a whole we cannot see, but feel.

Play-trust is a most valuable belonging. Sometimes it is shared most readily. But with others, a great deal of shared time and quietude is a prerequisite. At the beginning of our relationship, Sybil, a 2-year-old wolf, would often lie down and just watch me for hours without a trace of aggression or confusion. From my seat on a nearby tree stump, I would glance at her every so often. Finally, she would walk over, put her forepaws on my lap, and rest her head on my shoulder. She would leave as quietly as she arrived. I had the feeling then that there was deep in her a level of trust which needed more time and sharing than we had had up until then. She was later to prove me right.

Play-trust is like a seventh sense, enabling one to detect what is far away, hidden, and innermost. According to Laurens van der Post (1961, p. 67), such "wisdom is the sweetness of the strength that comes to the spirit dedicated to the union of the warring elements of life." This bond is the relationship that Carpenter (1959) describes for the Aivilak carver who "becomes one with the seal, and thus finds it easy to portray, for he is now, himself, seal." It is the "duck energy" of the Aangitsch people of Kamchatka who believe themselves and the ducks are one and the same spirit (Nollman 1987, p. 23). Laurens van der Post (1961, p. 211) believed the Bushman's "way of knowing was through what knew him;" which seems to be St. Paul's meaning in Corinthians when he says, "Then shall I know, even as also I am known."

Trust requires that I must give up control in order to have it. In giving up my power, I share the power of all my playmates. Since there is no struggle for power, no one loses. When, for example, I first entered an enclosure to play with seven anxious, cavorting 2-year-old wolves, there was no question of who had control. Wolves are much faster and stronger than I am. I simply knew not to try to control them. Having released my need for control, I discovered that I did not need it anyway. The wolves blended their movements with mine.

Without such trust, there is no ground of potentiality to support play. The player is born here; trust is the meaning from which all play movements emerge.

On a sunny, spring afternoon in a mountain meadow north of Yellowstone National Park, during a walkabout, I found three young bull elk drowsily resting in the shade of some lodgepole pines and intermittently grazing on the slope of a small hill. After watching them for a while and letting them see me, I felt as if one of them would allow me to share a closer experience.

I walked closer in a semi-circle around them. Two ran a short distance ahead, but the one stayed behind. I circled slowly so he could watch me. I moved to a spot ahead and along the path I thought the elk would take to join his companions. This young elk meandered and grazed in a zig-zag path toward me as I sat on the grass. I did not move. He kept up his slow pace until he was directly in front of me. He looked at me, but with one eye at a time, as he nibbled the grass right in front of my knees. I could smell his pungent sweetness, see his rib cage swell and relax, and hear his munchings. I felt a wondrous sharing in which each of us must have known that we were giving our trust to the other. Such trust is empowering; it is a very personal relationship, in

which for a moment the boundaries of the self seem to blend with the other.

To play is to be in touch. We were born with this code inscribed in our souls. We have allowed it to lapse through both disuse and misuse. We have been civilized senseless. What impresses me so deeply about my animal playmates is the presence of a certain kind of communication that we have all but lost. It is not just that they communicate more than words; we do that. It is that they allow the soul to express itself through movement, touch, and silence. They allow and expect the soul to be an initiator in play, whereas we tend to rely on words and use them as defensive shields. Play's touch is a gesture of deeply interested kinship.

Not giving in to the temptation to control, to formulate, to conceptualize, to focus—that is playful touch. It is the grasp of the infant rather than the fist of the fighter. One worried and preoccupied, the other simply present.

Dolphins, wolves, and young children seem to understand the importance of this trust. When my trust falters and I worry about such intellectual problems as credibility and verification, my playmates give me gifts—surprise of touch, smiles, trust, and affection—that encourage me to continue exploring.

My playmates have an uncanny ability to find that inner place that is vague or dark or puzzling within me and shine a ray of light there. Little by little, their trust expands this light, gradually dispelling the darkness. They always seem to know when I need them.   Like Bateson said of his relationship with dolphins, "Any relationship is maintained by a certain amount of un-earned fish."

Playmates

Play is haunted. A playmate is a single soul dwelling in two bodies.

Playmates create a kind of imprint, one that is known primarily through the heart. Play is a response to what is oldest in human and animal life. It represents a long memory, a kind of living continuity through generations of time. The teachers are the plants and animals as well as humans.

The lessons are passed on through a deeply felt sense of kinship which carries with it a sense of responsibility backward and forward in time and a feeling of power derived from a sense of belonging. The form and spirit of play are precious heirlooms.

To be a playmate is a reciprocal relationship in which the "I" within finds an "I" without. Such blending does not indicate a lack of individuality. On the contrary, each participant stands out as a unique and vivid individual. It is rather that this individuality is developed, maintained, and shared in the interests of all. Playmates provide a positive act of relation which helps me to know myself, not as a separate entity, but as an integral part of a larger whole.

This extraordinary sense of relatedness, of belonging as if all boundaries are abolished while at the same time retaining a sense of individual self, is the communion of play. For several years now, my play with many different species of animals and children leads me to believe that at the level of play we all speak the same language. An inner "I" responds to an "I" in another, which is, according to Lyall Watson (1979, p. 340), "primarily under the control of the contingent system, which is something all organisms have in common...At the level of their mitochondria, they all speak the same language."

Whether real or imaginary, playmates are specific, not categorical. They are unconditional mirrors reflecting simultaneously my uniqueness and my universalness. Through participation in play, I observe and recognize in an external source something inside myself. Paradoxically, this loss of self, this realization of

community can only be experienced in the individual.

What we share at the moment of play is the immediacy of a relationship. There is something that is absolutely uncategorical about this reality. The connection made between two playmates is one of trust and love or it is not made at all.

Paradox is the special gift of playmates. In my search for playmates, I have come to realize that there is a wonderful arithmetic paradox which exists among them. One plus one equals one. Play is not a collective experience. What makes play possible can only come from within the individual. It is the individual who finds the truth about play through the trust of a playmate. Playmates fit together into a functional whole, which responds unconsciously and collectively.

Often the energetic play sessions are preceded by periods of quiet shared softly over a long span of time. Before going in a wolf enclosure for the first time, I spent a week of long 8-hour days on the outside of their enclosure. I sat next to the fence so we (the wolves and I) could get to know one another. I touched, groomed, and watched; they licked, sniffed, and watched. It was a time for building trust in unknown beings.

There may be years of experience behind a moment of play. Here, there is no restless, anxious striving but an effortless, tranquil harmony. One of the most difficult aspects of play to grasp is this natural spontaneity and effortlessness in its movements. Conceptually, it seems easy to move naturally. Yet the more I think about the meaning of "natural," the more difficult it becomes to explain or experience. It can take an amazingly long time to regain the spontaneity of natural, childlike movement after so many years of forced contrived movements. There is, for example, in aikido a technique called *irimi-nage*, the 20-year technique. It is time not technique that gives play its breadth, depth, and spontaneity reminiscent

of the beginner's mind of the child with fluid openness and one-point intensity.

The difficulty is to have the patience to forget my expectations, reflections, and worries and face the present moment simply and purely.

The ability to perform the movements of play comes from training with playmates, while the heart of play comes from training the mind. This is "knowing by heart." It is a kind of courage or heart emotion, requiring neither violence nor an assertion of egocentric power over others. "I trust you to be who you are," not "I trust you to be who I want you to be."

Playgrounds

My childhood attached me to particular playgrounds, while growing sent me on a pilgrimage about the world searching for others. Like a tracker following a trail, I mark the place of my play thinking that play somehow lies on the ground there. I may even retrace my steps hoping to find the place of my play and thus recreate the moment. But like tracks in sand on a windy day, there is no physical evidence of such a place. Playgrounds are not laid out with chalk lines like a football field nor are they built of concrete and steel. Playgrounds are places stored in the soul. Play knows how to make itself at home anywhere. These are places of grace where reality opens up and one knows that he or she is at home. They are possible anywhere and are best not anticipated.

Playgrounds are made when mindscapes match landscapes. When the mind is allowed such freedom, it is filled and delighted with the intricacies and subtleties of place. A playground is a geographic convergence of lifeforms in which not only boundaries disappear but also the thought of being bounded. There is a story about Musashi, a renowned Japanese swordsman, who was re-

quested one day to do an ink painting before a powerful lord. He was dissatisfied with his efforts, perhaps because he lost his usual centeredness in the presence of the lord. "As soon as he was back home on safe territory" he produced the "one-night masterpiece" (Sogen and Katsujo 1983, p. 5).

Playgrounds are not places that you just pass through. Wherever you have played you have left something of yourself behind. Recently, while giving a workshop in the Wallawa mountains of northeastern Oregon, I left a yellow bead in a rock basin surrounded by peaks over 9,000 feet, following the Kiowa tradition of leaving a "gift to the place."

Some playgrounds are solitary—a nest for dreaming in the branches of an apple tree, a pasture with a hill for watching the summer clouds float by, a cliff on which to sit and watch hawks spiral upwards.

Other playgrounds are communal, time-spaces shared with a playmate. Harmony comes in understanding and sharing with others on their own terms. It is a most indefinable thing to speak about, the feeling, yet it is decisive because in the end it is what defines a playground. Like feeling the tickle in my hand and in my heart when a chickadee explores her perch on my finger. Like feeling the tingle of excitement in the back of my neck and the heightened sense of awareness when I find fresh grizzly tracks in river mud.

Sit down, anywhere you like. Give yourself a gift of time and space— enough to make a playground. Each playground has qualities found only by being there. I cannot tell you where this will be, but you will know when you open up to the possibility of such places. Playgrounds are available anywhere on earth, a place and time of refuge from turmoil, strife, and predatory beings. Places are hidden sanctuaries within us, where the unreal becomes actual— where a teddybear listens—and the world of everyday experience seems

unreal or at least insignificant. These cozy playgrounds are easy to recognize; we have all spent time there— attics, lofts, ponds, trees, fields, streams. All infinity can be contained in an overstuffed chair comforted by a Teddy, a quilt and a dream.

It is as though each of us has a play face covered by a contest make; we are programmed for cooperation, but choose conflict. But we can remove the masks and thereby end the era of contest. We can choose to end it in our own lives. For this to happen, play must be learned, understood, and felt in the particular lives of particular people carried beyond abstraction into the specific relations between each person and their place in the world. As individuals, we must first see that our present situation is ethically and ecologically unacceptable. Then we will find that the way out of contest and into play is not as impossible as it seems. The point is that our play *is* nature, just as much as the play of the summer breeze with aspen leaves and a grizzly glissading down a snow slope. Mind plays with thought as wind plays with clouds.

The value of play lies in what it indicates about the arrangement of the universe. The very fact that we began life as players is fraught with significance for our future. Playmates belong to a community that is still to come and does not, and probably should not, have any institutions to express it. Play can be an unprecedented, supremely courageous advance for our species, an exploration into a future unlike anything we have ever known. This is not to say that individuals have not shown us the way. I am reminded of Pablo Picasso's wonderful remark, "Don't blame me for those fantastic prices and possessings. I am only playing." And Zen master Sengai, "This play of mine with brush and ink is neither calligraphy nor drawing. Yet in the view of the common-minded people, it becomes mere calligraphy and drawing."

The question is not whether nations are prepared to substitute play for contest but whether you and I, as individuals, are prepared to do it. From the most ordinary of life's experiences, there is the possibility of a moment of awakening. Doubtless each of us holds in memory some special playmate—human or animal, real or imaginary—who has survived conditioning, schooling, and training. They are influences that maintain an inner fire. Life's wonder and mystery lie in such ecumenical relationships.

There is a playmate within who may awaken and stir an adult facade, as if it were a scab ready to drop off in a long awaited healing process. Once such awakening begins, we are unmistakably altered, never again to be mindless of the possibilities of play. We are, as Erich Fromm (1964, p. 87) suggested, fully born, able "to develop one's awareness, one's reason, one's capacity to love, to such a point that one transcends one's own egocentric involvement, and arrives at a new harmony, at a new oneness with the world." We then catch intimations of the depth of our kinship with all life forms, as we explore new playgrounds within our world of routine places and find new playmates among the crowds of our lives.

What if? Learning to relearn to ask this question is the most important lessor. It is the key that opens those fantastic doors of childhood imagination and play. I learned long ago not only to ask this question but to believe. I ask this question a lot. What if I were to play with all those wolves? What if Holly, the dolphin, were to take me under the sea? What if a Monarch butterfly landed on my finger? What if I played with all the children and animals of the world?

The fact is that I can play with the world. The fact is both the world and I need it.

Acknowledgments

Literature Cited

Carpenter, E. S. 1959. Eskimo. Toronto: University of Toronto Press.

Dyson, F. 1979. Disturbing the universe. New York: Harper and Row.

Eaton, E. 1974. Snowy earth comes gliding. Independence, CA: Draco Foundation.

Fromm, E. 1964. Zen Buddhism and psychoanalysis. New York: Grove Press.

Hesse, Hermann. 1972. Wandering. New York: Farrar, Straus and Giroux.

Highwater, J. 1981. The primal mind. New York: New American Library.

Huizinga, J. 1950. Homo ludens, Boston: Beacon Press.

Leboyer, F. 1976. Birth without violence. New York: Alfred A. Knopf.

Nollman, J. 1987. Animal dreaming. New York: Bantam Books.

Pearce, J. C. 1974. Exploring the crack in the cosmic egg. New York: The Julian Press.

Pearce, J. C. 1977. Magical child. New York: E. P. Dutton.

Sogen, O.; Katsujo, T. 1983. Zen and the art of calligraphy. London: Routledge and Kegan Paul.

van der Post, L. 1961. The heart of the hunter. New York: William Morrow and Co.

van der Post, L. 1986. A walk with a white Bushman. New York: William Morrow and Co.

Watson, L. 1979. Lifetide. London: Coronet Books.

Wilderness, Wildlife, and Conservation Education in Botswana Africa: A Personal Journey

Joseph F. Passineau[1]

Abstract.—The natural and cultural heritage of Botswana, Africa represents a rich treasury of wilderness values. The wilderness resource includes the vast Kalahari Desert and Okavango Delta with its savannah wildlife populations and the indigenous Bushman aboriginal culture. An African view towards wilderness values and conservation practices is considered by addressing resource issues from traditional and contemporary perspectives. The role of the Department of Wildlife and National Parks in managing these resources and in developing a National Conservation Strategy is described. Environmental awareness is being fostered by the Department's Division of Conservation Education through media campaigns, rural extension efforts, interpretive programs, educational parks, curriculum development, and Wildlife Clubs.

"What we need in the world today is to hear within us the sounds of the earth crying" (Zen Prayer).

In the veld, where we were standing, the moonlight shone, making black shadows and pale, cool light. The air was still and warm and fragrant with the grasses of the veld and the voices came to us softly...The girls sang well, their songs and the sharp rhythm of their clapping floated over the dark veld to us, mixed with the voices of the frogs. The frogs croaked so loudly by the pan, their croaking floated so clearly over the water, that for a while the girls just clapped their hands and let the frogs sing for them. The girls and the frogs kept time, and as the frogs voices gradually faded the girls began to sing again...

At the fire the dancers wheeled slowly in their course around the circle, and the firelight shone in flickering beams through their stamping naked legs, red on their naked backs...The dance went on all night, reaching a climax after midnight when the moon was high and sailing overhead. The medicine men were seized with trances that shook their bodies and rattled their teeth and sent them rushing headlong into the black shadows...It is a strange thing to dance all night...for the medicine of the rising sun. ["The Harmless People" A Portrait of the Bushman of the Kalahari by Elizabeth Marshall Thomas (1958, p. 252-254.)]

Introduction

Wilderness and Africa. From my earliest memories, Africa meant wilderness and wilderness meant Africa. For me wilderness is inseparable from a sense of place, its reality is rooted in the experiential. To talk about wilderness is to talk about the impressions of the senses ...the glow of fireflies floating over the meadow, the smell of the campfire, the roar of the lion. We each come to wilderness in our own way and in our own time.

This article and the multimedia presentation it summarizes reflects a phenomenological step in my personal journey in search of wilderness and its meaning. It also portrays the story of an African wilderness, its land forms, its wildlife, and its people. In specific, it is a story of efforts to protect and preserve the wildland heritage of the Kalahari Desert in Botswana, Southern Africa. The facts, antidotes, and insights are based upon 4 years of personal experience. From 1975 to 1977, I worked with the Department of Wildlife and National Parks in Botswana, Africa, and from 1977 to 1979 for the National Parks Authority in Lesotho, Africa. Since then I have maintained contact with colleagues there who continue to work toward conservation. The African experience fulfilled a boyhood dream and, perhaps more importantly, sparked a long-term personal and professional commitment to wilderness preservation, resource management, and environmental education. For me, wilderness means ecological understanding and stewardship. My passion for wilderness is fueled by awe, a sense of wonder, and a love of all creation.

Botswana's Wilderness World

Botswana is a country richly endowed with wildlife, wildlands, and wilderness values. Covering 561,800 km², Botswana is roughly the size of Texas. It contains vast expanses of relatively undisturbed and scenic lands supporting a great variety and number of wild animals. This wilderness resource includes the Kalahari Desert consisting of extensive deposits of windblown sand and a broad

[1]Central Wisconsin Environmental Station, Amherst Junction, WI..

savannah plain. The savannah is inhabited by wildlife populations of wildebeest, zebra, giraffe, impala, and elephant, as well as many predatory and endangered species including the hyena, lion, and cheetah (Owens 1984, von Richter and Passineau 1979). In contrast, the Okavango Delta in northern Botswana, forming a great oasis in the Kalahari, represents one of the last great wilderness wetlands in Africa. The Delta, characterized by a mosaic of rivers, reeds, and forest, is inhabited by wildlife including crocodile, hippopotamus, lechwe, and elephants as well as cranes, flamingos, and fish-eagles. (Campbell 1979)

A rich cultural spirit and heritage accompanies these dynamic ecosystems. For over 40,000 years the indigenous Bushmen, or San people, have inhabited the Kalahari. As one of only two aboriginal cultures still in existence (the other being the aborigine of Australia), the Bushmen personify the concept of "Survival through Adaptation." Their amazing knowledge of the desert has enabled them to survive in a land inhospitable to all others. As a nomadic hunting and gathering people, their existence depends on the simplest of technologies and on living close to the land. Based on creation myths, the Bushman believes people, animals, plants, the moon, sun, and stars exist as separate entities but with a common origin and purpose. Everything is simply a part of nature with a right to exist side by side with everything else—man is no exception (Clarke 1975).

As illustrated in the opening quote from "The Harmless People" by Bushman ethnologist Elizabeth Marshall Thomas (1958), the Bushmen have a rich social and spiritual life grounded in their "oneness with creation." Simplicity has reduced wants to needs and leisure time exceeds that found in modern societies. The "Sun Dance" celebrates life and commemorates the renewing energy

of the sun as giver of life. Dancing is a religious experience and accompanies rituals and passages from birth to death. Dances and trances serve to connect the human world to the greater world of the unknown and unifies man with nature. These visions of the unknown, and other scenes, are depicted in the many rock paintings found throughout Southern Africa.

Today less than 3,000 Bushmen live by traditional means, many of them in the Central Kalahari Game Reserve in Botswana. Others work as hired hands in farms and mines and are being acculturated into modern society. As wildlife and wildlands are threatened by farming, ranching, mining, and other modern technologies, the demise of this traditional culture appears inevitable (Campbell 1979, Clarke 1975).

When I think of the Bushman, I am often reminded of Laurens van der Post's "Lost World of the Kalahari" (1958) and his moving speech at the 1977 First World Wilderness Congress in Southern Africa. By sharing his memories of life with the Bushmen, he captured the highest vision of wilderness...an awe of the unknown, a respect for the great mystery that is earth, sky, light, and darkness. As a gazer of Bushman rock paintings and listener of sand songs and dance chants, I too will forever be struck by the beauty of the Bushman culture. To feel it and see the inevitable is to hear the last breath of the last cheetah. Will we ever comprehend the truth of the songs they sing?

Contemporary Culture

Today Botswana is a youthful, energetic nation, its culture and population dominated by the descendents of various black tribes which have migrated into the region over the past several thousand years. The political and cultural fabric of modern Botswana has been woven by diverse

forces including the dynamics of tribal migrations and affiliations, the impacts of British Protectorate rule, and Botswana's growth as an independent nation since 1966 (Campbell 1979). Traditionally, their society and economy were based on cattle husbandry. Today, agriculture is still the major economic force. The majority of the population (approximately 1 million) lives in the eastern third of the country where better water supplies support agricultural endeavors and village and urban settlements. A network of roads now encircles the nation, and the economy is diversifying through investments in other industries and services. A social, technological, and economic transformation is taking place. As a result, the natural resources and environmental quality of Botswana are being affected. Still the nation continues to take pride in its rich wildland legacy, which it openly shares with a world seeking majestic wildlife and inspiring wilderness (Campbell 1979).

Wilderness Values

The natural and cultural heritage of Botswana provides a treasury of wilderness values. The vast tracts of remote, unspoiled landscape and vibrant biotic communities seem to epitomize the word "wild" and the concept of "wilderness." To this is added the legacy of the Bushman culture and the continuity through time and space that it represents. In the Kalahari one is often awe-struck by the immensity of sky and space, the beauty of life forms, and the cry of age-old people.

Wilderness values predominate. But what are these values? Can they be classified in the context of U.S. Public Law 88-577 and the work of American colleagues seeking to analyze the wilderness experience qualitatively and quantifiably? Many areas in Botswana clearly meet the U.S. standards of size, character, and influence (The Wilderness Society

1984). They are truly "vast areas of undeveloped public land retaining primeval character and influence." The Kalahari and Okavango offer outstanding opportunities for solitude, primitive and adventurous recreation, developing relationships with nature, reflecting on personal values, and emotional and spiritual renewal."

Beyond this classification process, however, lies a deeper value. I am reminded again of my days on the Kalahari and of rock paintings. And I realize that true wilderness emanates from the land itself and the people it nurtures. It can only be gained by immersing oneself in the sense of place and by listening. Just as I am reminded that each individual must discover the meaning of wilderness for him or herself, I also think that each people/culture must discover their own wilderness. Superimposing an American view of wilderness with its evolution, laws, and classification on another's "land" may entirely miss the essential nature of wilderness. If "wilderness" is derived from a cultural context, might we all be guilty of "wilderness imperialism" as we homogenize the world with western views and forces. Should not each culture be allowed to discover its own roots and great mysteries...its own wilderness, mind, and spirit (Martin and Inglis 1984, Root 1984). Nash (1987) was correct in adding "American" to the title of his book "Wilderness in the American Mind." What about the wilderness mind of the Bushmen of the Kalahari? Perhaps they were closer to the truth— they simply painted rocks and danced till sunrise.

Wilderness Management

The extensiveness of wildland in Botswana is highlighted by a recent inventory of wilderness in Africa, sponsored cooperatively by the Sierra Club, IUCN, UNEP, and the International Wilderness Leadership Foundation (1987). Using remote sensing and other mapping techniques, the study classified 63% of Botswana's land base as wilderness (359,600 km^2 of a total area of 575,000 km^2). This area represented 23 separate areas. Of this total area, 99,342 km^2 were classified as under protected status in the form of national reserves, natural parks, and sanctuaries.

Although Botswana has no "formal wilderness act" in the sense of Public Law 88-577 in the USA, strategic efforts have been made to protect, preserve, and manage wilderness areas and values. As wildlife species and populations were reduced during the past century due to over hunting and conflicting land uses such as grazing and farming, the people of Botswana took efforts to protect wildlife habitat. These efforts resulted in the passing of wildlife conservation and national parks legislation in the 1960's. In accordance with these laws, the Department of Wildlife and National Parks was created to protect, manage, and develop Botswana's wildlife, scenic, and cultural resources. The department carries out administrative, law enforcement, research, and educational activities to achieve a balanced program of preservation, conservation, and sustainable utilization of the nation's natural resources.

Approximately 17% of the total nation (100,000 km^2) is preserved in 10 national parks and game reserves. These parklands represent a cross section of the country's scenery, major habitats, and wildlife for the benefit of present and future generations. Habitats represented range from the sandy dunes and plains of Gemsbok National Park in the south to the wetlands of the Okavango Delta and the Chobe National Park in the north. The Central Kalahari Game Reserve in the heart of the country represents a vast savannah plain. By limiting access, the area also serves as a reserve for traditional Bushman culture (from an American perspective this area approaches the ideal of Catlin's "park reserve" in which indigenous people continue to live in traditional ways). Wilderness values predominate in the National Parks. Visitors are allowed to enter under special conditions for educational, recreational, cultural, and inspirational purposes. Consumptive forms of wildlife utilization and other extractive practices are prohibited (Republic of Botswana 1986).

In addition, another 20% of the country is zoned as "Wildlife Management Areas." Here both consumptive and nonconsumptive utilization of wildlife are accepted. Wildlife management areas also protect animal migration routes and act as buffer zones between National Parks and major settlements and ranching areas. They also provide extra protection to some habitats and ecosystems which do not fall inside National Parks. As such, wildlife management areas constitute an important form of land use where the primary intent is to conserve and use wildlife on a sustainable basis (Balopi 1987).

Since its independence in 1966, Botswana has strived to build a viable economy and society based on democratic traditions. The Botswana political, social, and economic experiment has been recognized by many as highly successful. (I personally enjoyed my years there, and appreciate the ideals, commitments, and struggles of the Botswana nation.) Their conservation policies and programs have been internationally recognized. The forces of population growth, economic development, and lately, drought, however, place constant pressure on the limited resource base. The basic needs of the people are apparent...food and shelter as well as health, education, and leisure.

For purposes of economic development, Botswana has recently invested in several new ventures including mining efforts to tap the dia-

mond and ore beds under-lying the Kalahari. As described by the Botswana Minister of Local Government and Lands (Balopi 1987) during the World Wilderness Congress, major efforts have also been directed toward modernizing the livestock industry. In 1975, through the Tribal Grazing Land Policy, individuals and groups with large cattle numbers were encouraged to move from communal areas in order to reduce grazing pressures and social inequality. As a result major ranch areas in remote areas have been developed. Recognizing both the positive and negative aspects of this "development project," Botswana has recently introduced the National Land Management and Livestock Project, which is intended to instead emphasize "management of the land resource" (Balopi 1987).

As in other countries, some view economic development and other World Bank efforts as a threat to the wildlife, national park, and wilderness values of Botswana (Sierra Club 1986). To offset such threats, Botswana is actively formulating a "National Conservation Strategy," a process recommended by several international conservation organizations (Ngwamtsoko 1987). For example, through wildlife policy and zoning efforts, major areas, including the Okavango Delta, have been designated Wildlife Management Areas as described previously. The implementation of an ecologically sound "national conservation strategy and plan" will hopefully protect many of the environmental and wilderness values focused on during the World Wilderness Congress (World Commission on Environment and Development 1987).

Conservation Education and Wildlife Clubs

As one of the cornerstones to any "conservation strategy," education plays an important role in the long term conservation of wildland resources. Throughout the 1987 World Wilderness Congress and especially in the resolution session, there was a resounding call for concerted action in the area of international conservation/environmental education. Botswana has already begun.

In 1973 the Wildlife Conservation Education Division was established as an integral part of the Department of Wildlife and National Parks. The division was initially formed by grants from international conservation organizations, and leadership and training was provided by American volunteers, such as myself, participating in the Smithsonian/Peace Corps Environmental Program. Since 1977 the unit has been under the able leadership of Sedia Modise, with whom I worked during my 2 1/2 years in Botswana.

Since its inception, the Wildlife Education Division has been instrumental in developing a broad awareness among the citizens of the value of the wildland resources and the need for conservation. By using a problem-solving approach, the division has developed specific educational programs to address particular problems and targeted audiences. These programs include media campaigns, rural extension efforts, national park interpretive programs, and formal environmental education methods such as curriculum development, teacher-training workshops, and the creation of Wildlife Clubs. These efforts have had an important effect on expanding ecological awareness and sensitivity toward resource issues, including the need for wildlife management, land use practices, and environmental quality.

The creation of Wildlife Clubs and the development of Educational Parks have been especially important in fostering an appreciation for wilderness values. Since most of the national parks and wildlife areas are located large distances from most cities and villages, and travel is expensive and difficult, only a few of the citizens have had an opportunity to visit parks and view wildlife. To overcome these obstacles, Wildlife Educational Parks have been developed near three of the major cities, Maun, Francistown, and most recently, the capital city of Gaborone. Wild animals have been translocated to these fenced, natural areas. Visitors are invited to the area for recreational and educational purposes. The parks also provide a valuable tourist attraction. The Gaborone Park includes a visitor/education center and provides interpretive programs for the casual visitor and environmental education programs for schools and civic groups (personal communications with Sedia Modise 1987, and K. Ngwamtsoko 1987; White 1978).

The Wildlife Clubs of Botswana program was initiated in 1976 and has since grown to involve most secondary schools. The program, modeled after a similar program in Kenya, is designed to involve high-school students in meaningful, experiential conservation activities. Through a series of student/teacher workshops, a handbook of activities, and field trip outings, many students have had the opportunity to increase their knowledge and appreciation of Botswana's wildland heritage. Of special significance to the symposium on the Use of Wilderness for Personal Growth, Therapy, and Education is the Wildlife Clubs' program of wilderness outings. By participating in these outings many students have developed wilderness-related skills, interpersonal abilities, ecological understandings, and wilderness values. Other African educators attending the 1987 World Wilderness Congress have indicated that they are also utilizing the Wildlife Clubs' format to instill a sense of earth stewardship.

Summary and Conclusion

The natural and cultural heritage of Botswana represents a rich treasury of wilderness values. In addition

to vast tracts of wildland and diverse wildlife populations, Botswana is home to the Kalahari Bushmen, one of the world's last aboriginal cultures. In total these amenities offer exceptional opportunities for wilderness related experiences, as well as personal and spiritual growth.

Much of the wildland resource lies under the protective status of national parks, game preserves, and wildlife management areas. The Department of Wildlife and Natural Parks is responsible for the protection, management, use, and development of Botswana's wildlife, scenic, and cultural resources. Developments in other sectors of society, such as settlement patterns, grazing policies and practices, and other land uses, may threaten wildland values.

To save its wildland heritage, Botswana has embarked upon a program of conservation policy and management, including the development of a National Conservation Strategy. As one of the cornerstones of this effort, the Wildlife Conservation Education Division fosters among citizens a growing awareness of and appreciation for the nation's wildland heritage.

In closing I'd like to turn to a personal memory. For me Botswana will always represent Africa and Africa will always symbolize "wilderness." Through personal experiences such as walks in the veld and campfires with friends, the wilderness legacy of Africa has moved and transformed me. I remember especially well being touched by the spirit of the Bushman and by the friendship of Sedia Modise, as we shared a last campfire in the Kalahari. As the sparks drifted skyward, I was reminded of the Sun Dance, the Bushman's night-long struggle to re-establish a oneness with earth and sun.

For me, as for many, the essence of wilderness is mystery...and magic. Its ethereal qualities span both time and space, linking the past to the present and the present to the future. Through this sense of continuity we

may experience awe and wonder. The richness of earth's beauty warms us. We see better our place in the rainbow tapestry of landscapes, life forms, and unique human cultures. As we walk in wilderness, we feel a oneness with the earth. We learn to sing to the rhythm of frogs...and we listen within us to the sounds of the earth crying.

Literature Cited

Balopi, P. 1987. Speech presented at the Fourth World Congress; 1987 September 11-18; Denver, CO.

Campbell, A. 1979 A Guide to Botswana. Johannesburg: Winchester Press

Clarke J. 1975. The Bushman. Johannesburg, South Africa. The Museum of Man and Science.

International Wilderness Leadership Foundation. 1987. Protected African wilderness areas: a preview to the world wilderness inventory. International Wilderness Leadership Foundation.

Martin, V.; Inglis, M. 1984. Wilderness: the way ahead. Proceedings of the Third World Wilderness Congress. Findhorn Press, Scotland.

Modise, S. 1987. Personal communication with the Head of the Education Division, Department of Wildlife and National Parks. Botswana, Africa.

Nash, R. 1987. Wilderness and the American Mind. London: Yale University Press.

Ngwamtsoko, K. 1987. Personal communications with and presentation by the Director, Department of Wildlife and National Parks. Botswana, Africa. At 1987 World Wilderness Congress; 1987 September.

Owens, M. D. 1984. Cry of the Kalahari Houghton Miffline Company. Boston.

Republic of Botswana. 1986. Wildlife conservation policy. Government Paper No. 1 of 1986. Gaborone: Government Printer.

Root, W. P. 1984. Seekers, eye-jugglers and seers: ways of viewing Wilderness. In: Martin, V.: Inglis, M., eds. Wilderness—the way ahead. Scotland: Findhorn Press: 162-177.

Sierra Club. 1986. Bankrolling disasters: international development banks and the global environment Sierra Club. San Francisco.

Thomas, E. M. 1958. The harmless people. New York: Vintage Books.

van der Post, Laurens. 1958. The lost world of the Kalahari. Harcourt, Brace, Jovanovich, New York.

von Richter W.; Passineau, J. 1979. Endangered wildlife species in Botswana. In: Botswana Notes and Records, Vol II. Botswana, Africa: 121-125.

White, R. 1978. A working plan for the Gaborone Wildlife Reserve. Gaborone, Botswana: Department of Wildlife, National Parks and Tourism.

The Wilderness Society. 1984. The wilderness act handbook. Washington DC: The Wilderness Society.

The World Commission on Environment and Development. 1987. Our common future. New York: Oxford University Press.

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The Effectiveness of Wilderness Education: A Review and Evaluation

Robert L. Vogl and Sonia Vogl[1]

Abstract.—Wilderness education programs hold as goals love of self, others, and the environment. Based on these goals, it seems appropriate that wilderness programs attempt to develop a wilderness ethic, a land ethic, and a philosophy of life. Twenty-four dissertations dealing with wilderness education programs were reviewed for the effect of such programs on participants. Over 60% of the studies indicated that the programs had a positive impact on participants primarily in the areas of self-concept and improved social relations. Little was done regarding wilderness ethic, philosophy of life, or environmental attitudes.

In developing this paper, we had access to over 700 doctoral dissertations concerned with using the outdoors for educational purposes. The dissertations are part of a research library in outdoor education housed at the Lorado Taft Field Campus of Northern Illinois University. The library is intended for use by graduate students interested in learning ways to use the outdoors for educational purposes. Only a small number of dissertations were related to wilderness education.

In addition to a review of the dissertations, a number of books and articles were used to develop an overall perspective on what wilderness educators hold as expected outcomes of their programs. These expected outcomes were used to assess what topics are currently of research interest and what topics tend to be ignored.

Our presentation will begin with the expected outcomes of wilderness education programs, followed by a discussion of the dissertations reviewed, and close with some comments about popular and neglected topics in wilderness education research.

A wilderness education experience is always in danger of being disconnected from the rest of one's life. The pressures of just surviving each moment can make it difficult at times

for leaders of wilderness experiences to reach higher goals. While the escapism inherent in such experiences can be valued in itself, a broader philosophical perspective can connect the wilderness experience with the world in which the participants spend most of their lives.

A recent book, "The Closing of the American Mind" by Allan Bloom (1987), was helpful as a source of ideas for a philosophical perspective. The book's focus is that of a criticism of college education for failing to address the questions of what makes life worth living.

The search for the good life is an historic concern. It has always involved the cultivation of reason. It involves a search for ways in which to unite individual and social good. It involves knowledge about what is good for us and what will make us happy over the long run.

Our questions about the good life address the question of what it means to be truly human. The old admonition to know oneself is enriched by a knowledge of alternative forms of behavior and some examples of what is best in human behavior. Armed with self-knowledge and models of the best in human behavior, we can clarify for ourselves what really counts in the circumstances in which we live.

Such educational efforts move us beyond the level of merely reflecting the environments in which we grew up. They can help us consider how

we want to conduct our lives. Such an effort involves opening a channel to one's soul—to that inner voice which guides our final judgments and puts everything into perspective. Putting things into perspective involves our world view, our sense of connectedness to others and nature, and our sense of right and wrong which transcends destructive short-term tendencies.

Social progress is not inevitable; today's generation is not automatically better than their parents.' Both we and our youth need models of admiration to help us assess the good and bad within ourselves. It might prove interesting and perhaps startling to ask yourself, friends, and students what their image of a perfect body is followed by a question of what their image of a perfect soul is. I suspect our thoughts of the perfect body will be clear and our thoughts of a perfect soul more muddled.

The good life has always involved a sense of moving beyond selfishness and instant gratification to that of serving a higher purpose. If self-seeking is one's only end, then self-indulgence is justified. But self-seeking can destroy the sense of unity essential to the common good. The common good involves some necessities, some sacrifices, and a sense of mortality to reach some higher purpose and fulfill the promise of the good life.

By raising questions concerning the good life with participants, wilderness experiences can be connected

[1]Northern Illinois University, Lorado Taft Field Campus, Oregon, IL.

with the rest of one's life. In addition to a personal philosophical perspective, participating in a wilderness experience obligates one to address the issue of a wilderness ethic.

Graber (1976), in a monograph on "Wilderness as a Sacred Space," provides an excellent perspective from which to assess the environmental impact of wilderness education programs. She contends that the prevailing wilderness ethic, in the mind of the purist, is that of sacred space and a focus for religious feelings. It is the purist's verbal and visual images which help define the wilderness experience as an event central to one's inner life. These images heavily influence individual and group behavior within the wilderness as well as in political actions affecting wilderness.

The wilderness ethic is expected to guide human activity within wilderness areas. The wilderness is valued for its contrast to humans and their artifacts. One goes to the wilderness to transcend the ordinary world, self, and manner of perception. In the wilderness, one is expected to be in a receptive mood for contact with the sacred power. One recognizes his insignificance in comparison to nature and gains a sense of unity with nature.

The wilderness is also a model of how nature functions without human interference. It is a model of perfection. The sense of perfection expands to include a moral order. Spiritual insight comes from perceiving beauty in nature. God's original creation survives on a select portion of the earth.

These are the major postulates of the wilderness purist. They are important to wilderness educators as these beliefs have an impact on how their groups should behave in wilderness areas. The only appropriate behavior includes the following traits: spartanism, antiartifacts, humility, delight in natural features, aversion to social interactions of mass recreation, and isolation and escapism.

The purists' expectations also involve frustrations for them because many recreationists do not share this overriding concern with wilderness. Other wilderness users may focus on priorities other than wilderness such as personal growth, social interactions, or fun. Considerable tension can arise when users fail to abide by the tenets of the wilderness ethic. Yet the wilderness ethic is the standard by which group behavior is evaluated by wilderness advocates.

While the wilderness ethic is an appropriate guide for behavior in wilderness settings, it offers little guidance for one's behavior upon returning to one's normal daily life. This brings us to the land ethic as advocated by Aldo Leopold. Leopold's call to action was targeted at the landscape which supplies the resources that sustain modern life. Charles Little (1987) reminds us that Leopold held three criteria for implementing the land ethic in our normal lives: ecology, equity, and aesthetics.

Those directly involved in wilderness education programs identify certain experiences as being most likely to produce the outcomes they are seeking. While some leaders feel that wilderness itself has intrinsic educative qualities, most leaders impose a program on participants.

Wilderness experiences are seen as making demands on the entire person rather than the more limited expectations of traditional education programs. In a recent article, Miles (1987) outlined the contributions of wilderness education to outdoor education and education in general. His paraphrased ideas include the following education outcomes:

Humility;

Sense of wonder;

Recognition of the illusion of human control over nature;

Understanding of how humans are nature;

Sharpened awareness of human connectedness to nature;

Greater respect and appreciation for all life forms;

Greater awareness of living in the moment;

Simplified life-styles from necessity;

Experienced the whole of one's being; and

A return to normal life with a new view of possibilities in that life.

Colin Mortlock (1984) provides a comprehensive framework on how people ought to conduct their lives and what adventure programs can do to help accomplish those ends. Mortlock advocates that all human actions should be based on the following broad principles:

To try to develop to the best of his/her ability;

An awareness of, respect for, and love of self balanced against;

An awareness of, respect for, and love of others balanced against:

An awareness of, respect for, and love of the environment.

From Mortlock a list of potential learnings from adventure experiences can be assembled which includes the following ideas:

Discover the potential in oneself for constructive, expanding activities;

Develop a personal philosophy concerned with ultimate values;

Develop a framework of basic values to judge right and wrong;

Develop the virtues of the intellect (foresight, patience, industry, exactness, ingenuity, curiosity, problem solving, concentration);

Develop emotional qualities essential to living well (determination, self-discipline, self-reliance, vitality, integrity, humility, compassion/unselfishness);

Develop physical traits (motor skills for adventure activity, physical condition to sustain activity, willingness to participate in physical activity to get a "feeling great attitude"); and

Seek maturity by recognizing the truth of oneself, living with integrity, and pursuing happiness by seeking beauty in self, other living things, and the environment.

One develops a lengthy list of expected outcomes from wilderness/adventure programs. While the outcomes are worthy, they also reflect the high expectations of advocates of wilderness education experiences. Worthy purposes are essential and give a program and its leaders their vitality, but leaders also have the responsibility to support their claims with verifiable results, or acknowledge their inability to generate supporting evidence. Over the long run, the interests of wilderness education are best served by this process of open verification.

The list can also be used to identify which outcomes are most frequently researched and which ones tend to be ignored. Knowing this, the task of identifying research priorities in the field is made easier.

Review of Research—Introduction

Over 30 dissertations dealing with the effects of wilderness and wilder-ness-related education programs were located in the Lorado Taft Library collection. Several were dismissed due to unavailability or lack of relatedness to this project. The 24 applicable programs are included in this report.

Of the 24 studies included, 9 revealed no significant changes in program participants, and 15 revealed significant changes in participants as a result of wilderness education programs. While wilderness philosophy holds lofty ideals, programs researched focused primarily on enhancing self-esteem, improving group interactions, and, to a lesser degree, developing environmental/outdoor attitudes.

Based on the assumption that wilderness is relative depending on the populations, several categories of wilderness-oriented programs were addressed, including resident outdoor education or camp programs usually directed toward elementary school students, a variety of specialized programs, and Outward Bound programs. Four outdoor education programs, 12 specialized programs, and 8 Outward Bound programs are reported.

Programs included a wide variety of participants, from elementary school students to disadvantaged and gifted teenagers to adults.

Resident Programs for Elementary Students

Only one of the four resident outdoor education programs reviewed revealed no significant changes in participants as a result of treatment, while three indicated significant changes. One hundred fifty low-income boys, aged 11-15 (Alexander 1969), were randomly assigned to a control group or to an experimental group which attended a 6-week Red Feather Camp offering a variety of typical camp experiences. The Tennessee Self-Concept Scale and a locally developed Behavior Rating Scale were used as evaluative instruments. Pre- and posttests were administered. Although post-test scores increased twice as much for the experimental group as for the control group, neither increase was statistically significant.

Three hundred sixth graders were assigned by a stratified random sample to control or experimental groups in a study of a 1-week resident outdoor education program (Becker 1977). A semantic differential scale, with statements which coincided with the state's environmental education guidelines, was developed. Reliability and validity were assumed after administering the instrument to fifth-graders. Pre- and posttests were administered to both control and experimental groups, and data were analyzed by analysis of variance (ANOVA). Differences between pre-tests, except on the concept of environment, were not significant. Differences between boys and girls were also not significant. Posttests revealed no significant differences between groups on the concepts of environment, interdependence, and pollution; but differences were recorded, significant at the .05 level, on the concepts of conservation of natural resources and human impact on the environment.

Because of some significant positive changes and no negative changes in the experimental group, the author concluded that resident outdoor education programs should be offered to all students and that more studies should follow.

Entire classes of fifth- and seventh-grade students from two coed and two all-girl schools formed the population for 1-week residential experiences at Echo Hill, a rustic private camp (O'Conner 1983). Each school attended the camp separately; all together 148 students were involved. The program included three goals: to heighten knowledge of the outdoors, lessen barriers to the physical world, and heighten knowledge of self and others. Program ac-

tivities were grouped into formal classes, recreational activities, living arrangements, and housekeeping.

Self-concept was measured by the Coopersmith Self-Esteem Inventory, with a test-retest reliability of .70 and assumed validity, and the Michigan State General Self-Concept of Ability Test with test-retest reliabilities ranging from .77 to .92. The Student Outdoor Education Inventory measured achievement levels and outdoor/environmental concerns. Pre- and posttests were administered. Scores were analyzed by t-tests. Increases in self-esteem, as measured by both the Coopersmith and Michigan instruments, were significant at the .05 level. Students with achievement levels above the 75th percentile increased both their self-esteem and self-concept; those between the 50th and 75th percentile increased their self-concept; and students below the 50th percentile increased their self-esteem. Posttest environmental and outdoor concerns scores increased at the .05 level of significance; scores of both boys and girls with previous outdoor experience as well as girls without previous experience increased significantly, while scores for males without previous experience did not increase significantly.

Subjective reports by students revealed that they felt the camp experience was interesting, enjoyable, and special. It should be noted that camp instructors, who were seen as fun and informal, were considerably younger than school teachers.

Toward the end of the school year, 110 sixth-grade students from all elementary schools in an upper-middle class community took part in a 4.5-day outdoor education program (Miller 1979). Students arrived at camp on Sunday evening and left the following Friday noon. Teachers and volunteers acted as staff in a program which offered a wide variety of experiences, including orienteering, canoeing, rappelling, nature and forest activities, caving, crafts, games, and recreation.

The Tennessee Self-Concept Scale, the Horvat Environmental Orientations Tests, with a reported reliability of .70 to .81, and the Cockriel Sociometric Analysis Scale served as evaluative instruments. Pre- and posttests were administered. Pretests were administered immediately before the experience, and posttests were administered immediately following the experience as well as 1 month later.

Positive changes existed in all self-concept areas, with statistically significant increases occurring at the .05 level for self-criticism, total conflict, self-satisfaction, and personal self. There were no significant changes in posttest one and posttest two scores. Posttest scores revealed a significant increase in concern with overpopulation and a significant decrease in concern for the general environment, with no differences between posttest scores. Leaders—counselors, teachers, principals, and policemen—increased in social stature. while environmental concerns did not appear to change much, social benefits were recognized as a result of the program.

It appears that resident outdoor education programs, particularly for middle and upper-middle class elementary school children, result in increased self-concept and social awareness, with environmental attitudes remaining relatively unchanged.

Special Programs

Of the 12 special programs studied, 5 revealed no significant changes in participants as a result of the programs.

A program of 7- to 10-day trips in the Sierra Madre for alienated youths, both white and Mexican, between the ages of 15 and 18 who had no previous wilderness experience, yielded only tentative conclusions (Georgi 1978). A student questionnaire directed at self-perception of

change indicated that participants possibly better understood life meanings and learned more about environmental concerns in a wilderness situation. Further study was recommended.

Potential dropouts with average intelligence, between the ages of 15 and 18, were selected by principals to serve as control and experimental groups, while well-adjusted youth served as a control (Cole 1957). Students in the experimental group spent 1 month at a Work Learn Camp. Interviews with the boys served as the primary evaluative instrument. Seventy percent of the campers felt that camp offered them skills that could lead to employment, yet fewer campers than noncampers graduated from high school.

Two fourth-grade classes from an urban area received either instruction in adventure skills (on the school grounds, not in the wilderness) or the standard fourth-grade physical education curriculum (Danziger 1982). The Piers-Harris CSCS (a self-reporting, self-concept scale) revealed no significant differences between control and experimental groups.

Sixth-grade students from both public and parochial schools in white, working-class neighborhoods took part in a Project Adventure ropes course (Deery 1983). Ten raters, trained by the author, scored students on the "infinite wall" activity. No relationship between locus of control and any of the items on the rating scale was observed.

One hundred thirteen socially and economically depressed youth, both black and white, male and female, took part in several 4-day Project Apollo courses (McDonald 1983). A self-reporting How I See Myself Scale, used with Project Apollo programs for over 10 years, revealed significant growth for the experimental group in only 2 of the 13 categories: autonomy and self-image.

The populations in these studies were primarily low-middle to lower-

class teenagers. Various wilderness and wilderness-oriented programs appeared to have little effect on them.

Thirteen gifted boys between the ages of 11 and 13 were selected to take part in a 2-week camping and canoeing program in the wilderness (Alton 1982). forty different activities were offered. The Inventory of Outward Bound Effects, developed and validated by Outward Bound, along with an observer's checklist, served as evaluative instruments. Results indicated that self-awareness, acceptance of others, and self-confidence increased at the .05 level of significance; interpersonal competence did not increase significantly. The author concluded that self-awareness and confidence increased with increasing challenges, and that challenging outdoor activities and problem-solving tasks allow gifted youth to assess their personal values and the distances between real and imagined limits.

Randomly selected boys and girls between the ages of 10 and 13 (20% of whom had leadership potential, and 80% of whom were determined socially, culturally, economically, and educationally disadvantaged) were participants in a program of either a 12-day "typical" camp or a 12-day "special" camp which offered outward-bound type experiences (Coons 1973). Parallel rating scales—for self, staff, and guidance staff, with test-retest reliability of .94—were developed along with a "Guess Who?" sociometric scale. The objective was to measure development of a more positive self-concept and more positive attitudes toward school and the learning process. Chi-squares, supported by sociometric data, revealed that more positive attitudes on all issues, significant at the .05 level, existed for the experimental group. No comments were made regarding results for the leaders versus non-leaders. The author concluded that schools interested in raising self-concept should consider such a program.

Thirty-six high-risk, violent adolescents over the age of 16 (residents in a boys' home, 64% of whom had arrest records) experienced a 9-day Wilderness Bound experience (Cataldo 1982). Since not enough boys were left from the original sample to provide a control group, participants were matched with a non-participant. Evaluative instruments included tape-recorded interviews and interactions, performing tests of skill with points given for procedures vital to performing the skill adequately, and observing and taping verbal interactions at a barbecue. Categories noted were physical/verbal abuse, acts, solo efforts, cooperation, and relationships.

Results revealed that skills of cooking, camp use, and roping up were higher for the experimental group than for the control group at the .01 level of significance, and for the experimental group's posttest over the pretest at the .05 level. Observations of interactions revealed posttest improvement over the pretest at the .05 level for three areas of combative-agreeable behavior: physical abuse, response to insults, and cooperation.

Follow-up showed no arrests for 36% of the experimental group during the next year. Fifty percent re-enacted skills learned during the 6 months following the experience.

The author concluded that working through conflicts linked to challenges, accepting adults, and increasing competence in dealing with the physical/social environment helps teens to cope with otherwise combative behavior.

Sixty members of a 4-H Club who applied for summer camp were randomly assigned to attend either a 1937 type camp with a "typical" camp program or an outpost unit of the same camp 1.5 miles from the central camp. Noncampers constituted the control group (Christy 1982). The experimental group lived in tents with no bathing facilities; their program consisted of rotating

daily-living duties and rugged outdoor and nature-oriented recreation.

The Molward-Ginter Outdoor Attitude Inventory, with measured reliability of .80-.86, was administered as pre- and posttests. As measured by posttests, overall outdoor attitude scores, overall environmental scores, education attitude scores, socialization attitudes, and pollution attitudes were significantly higher for the experimental group than for either the central or control group. The level of significance was as high as .0001 for outdoor attitudes. Although scores became more positive for both central and control groups, significant differences were found.

The author concluded that the outpost campers felt that they were being treated as adults, that each contributed to the group's well-being, and that they performed unfamiliar tasks successfully, which lead to higher attitudinal scores. No such challenges were met by either of the other two groups.

Twenty-five men and 22 women between the ages of 18 and 31 attended a 95-day NOLS course of wilderness adventure activities (Bridgewater 1981). Rotter's Internal-External Locus of Control and Jackson's Personality Forms AA & BB served as evaluative instruments. The group's posttest score was compared to their pretest score and to the scores of a normal group. Men and women both moved significantly from abasement and diffidence toward autonomy, endurance, order, play, and sentience. Men revealed a higher sense of personal control than women did. The author concluded that the group developed attitudes necessary for coping.

Fifty-nine adolescents over 14 years of age with no physical or emotional problems were assigned to participate as either control or experimental groups in a 16-day adventure-based program, Project USE (Vogel 1979).

Shostrom's Personal Orientation Inventory served as the evaluative

instrument. Posttest scores measured significantly higher at the .05 level for 7 of the 12 items of self-actualization and self-perception of personal change. The author felt that the experience helped participants to become more fully functioning and to live a more enriched life.

Seventy-five boys and girls in grades 9-12 volunteered to participate in a program comparing Project Adventure, a risk-type program, to the standard physical education curriculum (Quimby 1982). All activities took place on the school grounds. Physical tests, the Tennessee Self-Concept Scale, and the Platt Affective Behavior Scales served as evaluative instruments. In an open-ended questionnaire, more students responded positively to Project Adventure than to the standard curriculum. Self-concept increased significantly for the Project Adventure group. The overall experience was deemed positive.

Wilderness and wilderness-related adventure education programs, directed at both adults and normal and troubled teens, tended to result in more positive self-concepts and socially acceptable behavior, while changing little in the area of outdoor/environmental attitudes.

Outward Bound Programs

Five of the eight studies of Outward Bound programs found significant differences between program participants and nonparticipants; only three did not.

In the Northwest Outward Bound school, 160 students and over 1,200 nonstudents who had inquired about the program took part in a study which focused on choosing between cautious and risky alternative actions (Davis 1975). Kogan and Wallach's Choice Dilemmas Questionnaire, with relatively high reliability and validity, revealed through the use of t-tests that females were slightly more inclined to take risks after the program while males were slightly

less inclined. No results were statistically significant.

One hundred seventy male and female high school students took part in Force-12, an Outward Bound type of program (Jones 1978). The Tennessee Self-Concept Scale, Piers-Harris Children's Self-Concept Scale, and the AAHPER Youth Fitness Scale revealed no significant changes in pre- and post-test scores.

One hundred twelve adults, aged 20 to 36+, spent 23 days at Colorado Outward Bound School (Scranton). The Inventory of Outward Bound effects indicated that changes, measured at the .05 level, had not taken place in esteem, awareness, assertion, or acceptance of others.

Administering the 16 PF to 25 instructors and 119 students as pre- and posttests led to the assumption that it could predict potential dropouts from an Outward Bound program and the conclusion that basic similarities exist between sexes (Hendy 1975).

Affluent males between the ages of 15 and 37 volunteered to attend the Hurricane Island Outward Bound School (Matthai 1973). Self-rating scales based on Outward Bound activities and developed by the author revealed through pre- and post-tests that a general, an outdoor, and a scholastic sense of competency increased at a level significant at the .001 level. Older students sensed greater success, and younger students were more involved in activities. The author concluded that the challenges posed were necessary to evoke confidence.

Twenty-six men and 16 women, most between the ages of 16 and 21, with the rest ranging up to 47, attended a 24-day Outward Bound school that included map and compass work in the desert, rock-climbing and rappelling, ropes, and a raft trip (Leiweke 1976). A Personal Orientation Inventory, indicating an individual's view of one's own personality, with a reliability of .74 and validity assumed due to a .01 difference

between clinically judged self- and nonself-actualized people, was administered. Results revealed a healthier ratio between inner and outer direction and time competence and incompetence, and a significant increase in self-esteem values. Differences between pre- and posttest scores were significant at the .05 level. It was concluded that the Outward Bound experience significantly influences self-actualization in a positive direction.

A mixed group of men and women from the ages of 16-31, from diverse backgrounds, attended a 26-day program at the Hurricane Island Outward Bound School and participated in progressively challenging activities (Winkie 1976). Administering the Tennessee Self-Concept Scale and the Defining Issues Test, which presented moral dilemmas, revealed that moral judgment improved, although not at a statistically significant level; also, while self-concept changes for the entire group were not significant, they were for women. It was concluded that a threat to personal well-being could establish a new sense of self-awareness and capability.

A large (291) group of boys aged 15-19 years attended the Hurricane Island Outward Bound School for a 26-day course (Clinton). The Tennessee Self-Concept Scale revealed that self-concept scores improved between the pre- and posttests at the .05 level of significance for eight of nine items and at the .05 level for moral self, personal self, and self-satisfaction between the posttest and a follow-up test administered 6 months later. No significant differences existed between age, socioeconomic level, race, residence, sports background, or having attended a specific Outward Bound Course.

All eight Outward Bound programs cited included participants from a broad range of backgrounds; three revealed no significant changes, five did. Outward Bound programs had a positive effect on perception of

the self: self-concept, self-actualization, self-esteem.

Summary and Conclusions

The prevailing belief among wilderness purists is that wilderness is sacred space; the wilderness ethic states that it should be treated as such. Benefits accrued from wilderness experiences are claimed to include developing a personal philosophy which includes a wilderness ethic, a land ethic, an improved sense of self, and concern for others.

Dissertations based on wilderness and wilderness-related programs revealed that such programs generally had a positive effect on participants. However, these effects were primarily in the area of self-perception, with a few in the area of improved human relations. Very little effort was devoted to wilderness/outdoor/environmental concerns. When a program did focus on these areas, it was found to have little, if any, impact.

It appears that research on wilderness programs should be more broadly based and include a focus on developing a personal philosophy which includes a wilderness ethic, a land ethic, and concern for others as well as an improved sense of self.

Literature Cited

Alexander, A. A. 1969. The effect of a residential camping experience on the self-concept of boys from low income families. Boston University School of Education. Ed.D. dissertation.

Alton, Thad Paul. 1982. The application of experiential outdoor education and systematic intervention activities to influence affective development in gifted adolescent boys. Farleigh Dickinson University. E.D. dissertation.

Becker, Lenere M. 1977. The effect of the resident outdoor experience on attitudinal change toward environmental attitudes. University of Northern Colorado. Ed.D. dissertation.

Bloom, Allan. 1987. The closing of the American mind. New York: Simon and Schuster.

Bridgewater, Herbert G. 1981. The effect of a ninety-five day wilderness camping program upon personality. Oklahoma State University. Ed.D. dissertation.

Cataldo, Charles J. 1982. Wilderness Bound Experience: testing competence in a survival setting. Columbia University. D.S.W. diss.

Christy, William R. 1982. An assessment of the effects of two residential camp settings on environmental attitude development. Virginia Polytechnic Institute. Ed.D. dissertation.

Cole, Roy. 1957. An evaluative study of an extra-mural school camping program for adolescent boys identified as potential school leavers. Wayne State University. Ed.D. dissertation.

Coons, Ernest M. 1973. A two-week resident camp offering the primary objective of predetermined attitude change for early adolescents. The University of New Mexico. Ph.D. dissertation.

Danziger, Ann G. 1982. The effects of adventure activities on the self concept of elementary school children. Ohio State University. Ph.D. dissertation.

Davis, Mason R. 1975. The effects of Outward Bound Training on individuals' propensity for risk taking. University of Oregon. Ph.D. dissertation.

Deery, Brian E. 1983. The effect of project adventure on sixth graders' reading and math scores, and its relationship to locus of control. Boston College. Ph.D. dissertation.

Georgi, David R. 1978. Wilderness as a context for learning: an exploratory study with implications for learning programs involving life-meanings, environmental education, and attitudes. University of California. Ph.D. dissertation.

Graber, Linda H. 1976. Wilderness as sacred space. Washington DC: The Association of American Geographers.

Hendy, Christopher. 1975. Outward Bound and personality: 16 PF profiles of instructors and ipsative changes in male and female students 16-19 years of age. University of Oregon. Ph.D. dissertation.

Jones, Christopher A. 1978. An evaluation of the effects of an Outward Bound-type of program upon the self concepts and academic achievement of high school students. Boston University. Ed.D. dissertation.

Leiweke, John T. 1976. The influence of the twenty-four hour Outward Bound experience on self-actualization. Saint Lewis University. Ph.D. dissertation.

Little, Charles E. 1987. Letting Leopold Down. Wilderness. 50(177): 45-58.

Matthai, Robert A. 1973. The effect of Outward Bound on sense of competence. Harvard University. Ed.D. dissertation.

McDonald, Daniel L. 1983. The effect of participation in an outdoor experiential education program on self concepts. Oklahoma State University. Ed.D. dissertation.

Miller, Douglas G. 1979. A study of environmental, social, and self-concept attitude changes in students, through participation in a sixth grade camp program. St. Louis University. Ph.D. diss.

Mortlock, Colin. 1984. The adventure alternative. Cumbria, England: Cicerone Press.

O'Conner, Sean F. 1983. An ethnographic investigation on the impact of a residential outdoor education program on the self-esteem and attitudes to the outdoors of 5th and 7th grade students. Catholic University of America. Ph.D. dissertation.

Quimby, Thomas R. 1982. The effect of Project Adventure on selected affective and psychomotor outcomes. Boston University. Ed.D. dissertation.

Vogel, Robert M. 1979. The effects of
Project USE Training (Adventure
Training) on the participants' self-
actualization and self-perceptions
of personal change. Temple Uni-
versity. Ed.D. dissertation.
Winkie, Philip A. 1976. The effects of
an Outward Bound School experi-
ence on levels of moral judgment
and self-concept. Rutgers. Ed.D.
dissertation.

Wilderness Education: A Holistic Model

Delmar W. Bachert[1]

Abstract.—The purpose of this presentation is to share a comprehensive definition of wilderness education. In addition, the author suggests a holistic model for wilderness education, the Wilderness Education Matrix. Suggestions for the application of both the definition and the model to wilderness management as alternatives to regulation are offered.

America's designated "supply" of wilderness consists of almost 90 million acres of land in the federal system, 7,365 miles of wild and scenic rivers, and nine state wilderness systems. America's "demand" for wilderness recreation will continue to grow. With protection of resources and open space as the number one ranked issue in the "Report and Recommendations to the President of the United States" by the President's Commission on Americans Outdoors (1986), we should be pleased that attention has been focused here and yet dismayed that the need is still so strong. In dealing with the multi-faceted issue of protecting our wilderness resource, I suggest we take a holistic approach to wilderness education.

Limited support for education, as a partial solution, can be found in the literature. Roggenbuck and Ham (1986) found:

> Recreation managers are increasingly interested in the use of information and education as a management tool because of its potential ability to increase the quality of recreation experiences, reduce impacts, gain support for management practices, and reduce management costs during times of budgetary constraints and personnel changes.

[1] Leisure Studies, Appalachian State University, Boone, NC.

Recently I completed historical research on the foundation of the National Outdoor Leadership School (Bachert 1987). The National Outdoor Leadership School (NOLS) is recognized as an international leader in the field of outdoor education, more specifically, wilderness education.

One of the problems encountered in studying the history of NOLS was exploring the practice of wilderness education. A review of literature in the areas of wilderness management, experiential education, and outdoor education indicated a lack of either a comprehensive definition or a model for the concept of wilderness education. This led to the establishment of two objectives: the development of a comprehensive definition of wilderness education and the development of a holistic model of wilderness education.

The historical research method used to gather data on NOLS had two phases. In the first phase, information was assembled into a meaningful chronology of people, places,
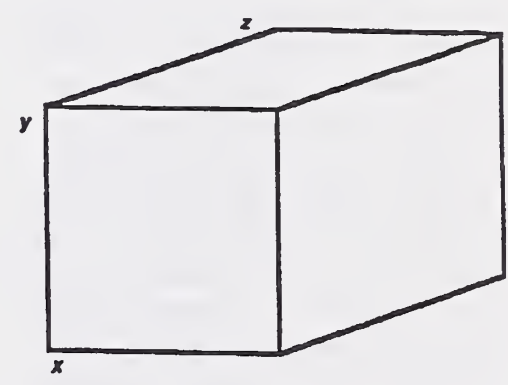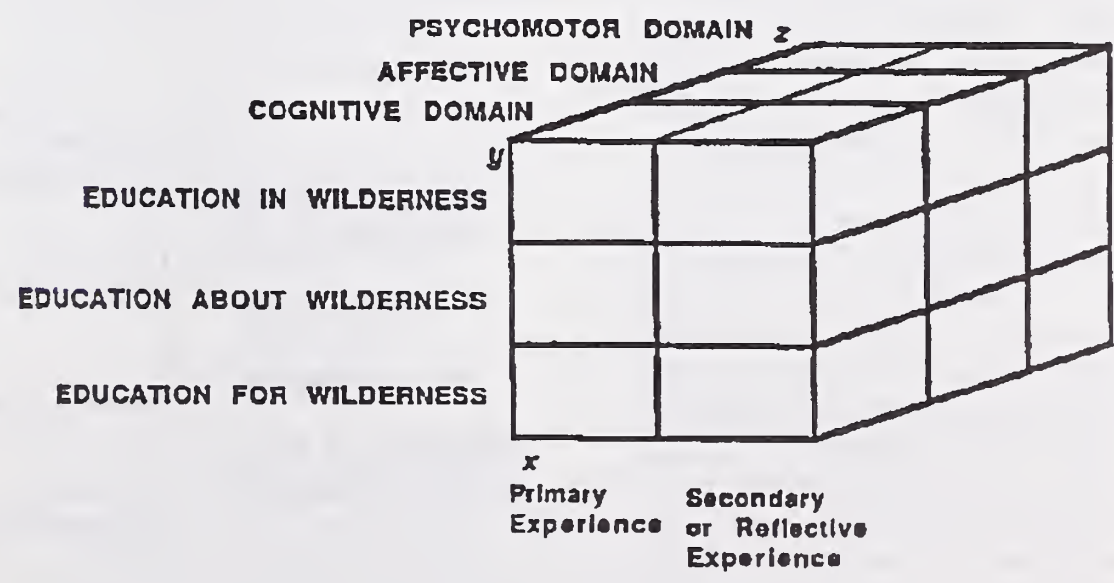

Figure 2.—A wilderness experience.

Figure 1.—Wilderness education matrix.

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and events of significance to the founding of NOLS. In the second phase, the data were analyzed and interpreted. It is from the analysis and interpretation of the NOLS curriculum and the supporting literature review that insights into wilderness education are drawn.

First, a comprehensive definition: Wilderness education is education in the wilderness, implying a place; education about the wilderness, implying a topic; and education for the wilderness, implying a reason (Bachert 1987). This definition was based on writings by Donaldson and Donaldson (1958), Ford (1981), Sharp (1957), and Smith et al. (1972).

Second, a holistic model for wilderness education is suggested. One can view the NOLS experience as a special case of the larger and more general concept of a "wilderness experience." The "experience" results from an effort termed "wilderness education." The model, presented in figure 1, is called the Wilderness Education Matrix (Bachert 1987).

Graphics can help one grasp the concept of a wilderness experience expressed in terms of education. Figure 2 is simply a blank cube representing a wilderness experience (perhaps a NOLS experience). Its contents are open to interpretation. Figure 3 represents the wilderness experience in aspects of the two realms of experience set forth by Dewey (1938)—primary and reflective experiences. The act of hiking a wilderness trail might serve as an example of a primary experience. Sharing photographs with friends weeks later, a reflective experience. It is even possible to have a totally reflective wilderness experience; one could read a book and never set foot into a real wilderness. That same reader could develop strong attitudes and values about wilderness.

Figure 4 is a model of the concept of wilderness education with three components of the definition emphasized. Figure 5 represents potential growth in each of the domains of learning: cognitive (Bloom 1956), affective (Kratwhol et al. 1964), and psychomotor (Harrow 1972). One can assume that each domain can be found in any learning experience and certainly in a wilderness experience.

Figure 1 can be viewed as a composite or overlay of figures 3, 4, and 5 over figure 2. That is, a wilderness learning experience can be represented as a combination of experience, wilderness education, and growth within the domains of learning.
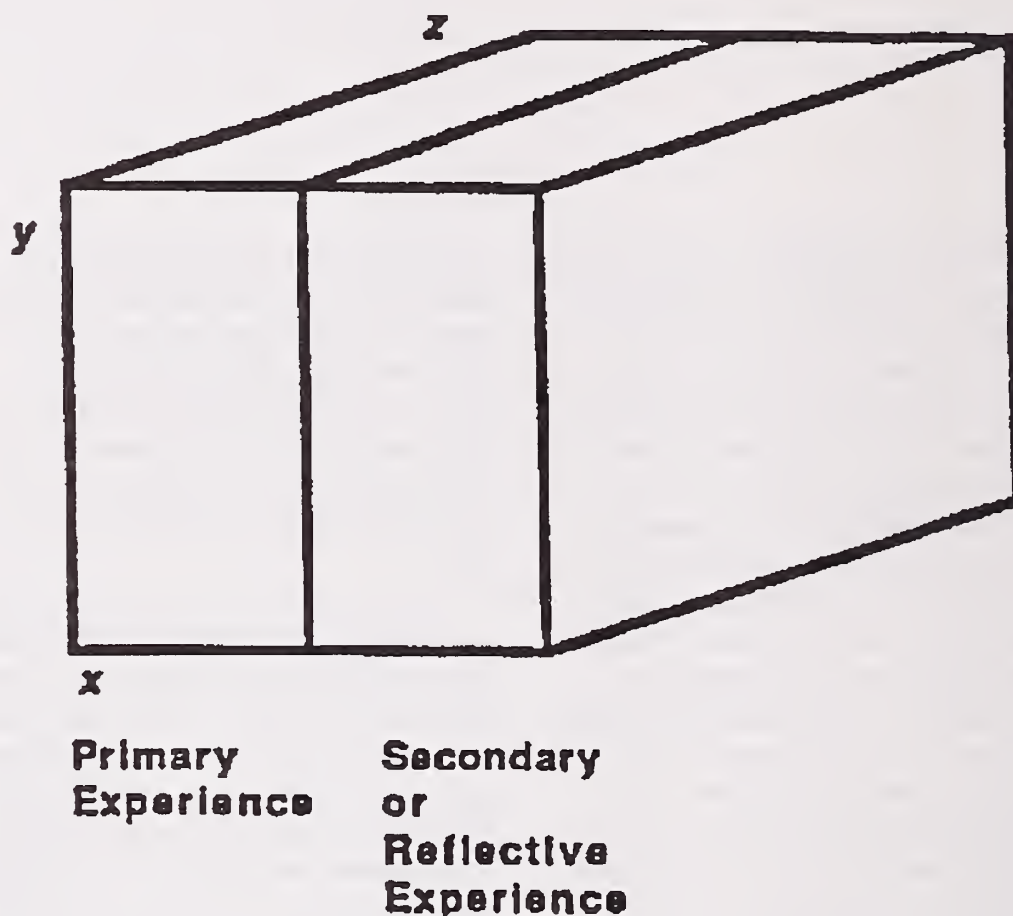

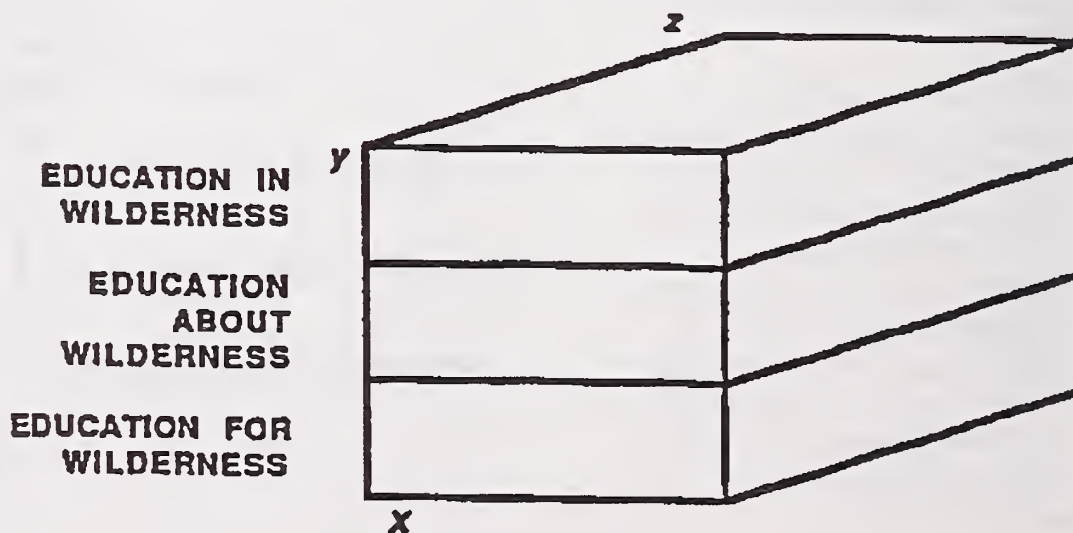Figure 3.—Experiential education: a philosophy.

Figure 4.—Wilderness education: a method of education.

In figure 1, the reader can see the structure and elements of the Wilderness Education Matrix. It has three dimensions. Each dimension lies on an axis. The X axis consists of Dewey's theory of experience and education.

The Y axis represents the three components of Bachert's comprehensive definition of wilderness education.

The Z axis is drawn from learning theory and is composed of the cognitive, affective, and psychomotor domains of learning. It consists of 18 cubes. The walls of the cubes should be viewed as flexible, not rigid, allowing for expansion of the content. It is the interaction between the learner and his environment, the "learning experience," that fills each of the cubes with substance. Some of the interaction is planned. Some is incidental. But it is these interactions that make up a wilderness experience. The "NOLS experience" is the unique set of interactions that an individual has on a NOLS expedition.

A wilderness experience, in general, and a NOLS experience, in particular, may be larger than the sum of the parts. It is also suggested that the model allows for differing degrees or intensity of wilderness experience. The difference is accounted for by the amount of emphasis (planned experience, evidenced by written goals or objectives) and incidental experience within each cube that an individual encounters.

The proposed definition of wilderness education can provide a basis for both communication and re-

search. Likewise, the Wilderness Education Matrix can be used as a foundation for facilitating both communication and further research. The matrix provides a tool for comparing and contrasting various wilderness education or information programs based on both written goals and objectives and actual field practices. Suggestions for wilderness educators and practitioners include applying the various components of the matrix as a basis (criteria) for program planning and program evaluation.

Lucas and Krumpe (1986), after reviewing wilderness management literature, listed a number of issues including: How can visitor regulations be minimized while protecting wilderness values? and How can public education and information be made more effective tools for managing recreational use? They recommended: Stress educational/informational approaches as a means of visitor management and as a means for minimizing regulations that tightly control visitor movement and behavior.

In conclusion, I suggest that wilderness education is a preferred alternative to regulation in wilderness management. Wilderness management and wilderness education programs can improve the judgment and positive performance of users by providing both primary and reflective experiences in, about, and for the wilderness resulting in positive changes in their cognitive, affective, and psychomotor learning domains. The author suggests expanded use of wilderness education and the application of the wilderness education matrix as management tools.

Literature Cited

Bachert, D. W. 1987. The NOLS experience: a history of the founding of the National Outdoor Leadership School. Raleigh, NC: North Carolina State University. Unpublished Ph.D. dissertation.

Bloom, B. S., ed. 1956. Taxonomy of educational objectives—handbook I: cognitive domain. New York, NY: David McKay Co., Inc.

Dewey, J. 1938. Experience and education. New York, NY: Collier Books.

Donaldson, G. W.; Donaldson, L. E. 1958. Outdoor education: a bibliography. Washington, DC: AAPHER.

Ford, P. 1981. Principles and practices of outdoor/environmental education. New York, NY: John Wiley & Sons.

Harrow, A. J. 1972. A taxonomy of the psychomotor domain. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kratwhol, D. R.; Bloom, B. S.; Masia, B. B. 1964. Taxonomy of educational objectives, handbook II: affective domain. New York, NY: David McKay, Co., Inc.

Lucas, R. C.; Krumpe, E. E. 1986. Wilderness management. In: President's commission on Americans outdoors, a literature review, management. 1986-165-816:64524. Washington, DC: U.S. Government Printing Office: 121-135.

President's Commission on Americans Outdoors. 1986. Report and recommendations to the President of the United States. Washington, DC: U.S. Govt. Printing Office.

Roggenbuck, J. W.; Ham, S. H. 1986. Use of information and education in recreation management. In: President's commission on Americans outdoors, a literature review, management. 1986-165-816:64524. Washington, DC: U.S. Government Printing Office: 59-72.

Sharp, L. B. 1957. Introduction. In: Outdoor education for American youth. Washington, DC: AAPHER.

Smith, J.; Carlson, R.; Masters, H.; Donaldson, G. 1972. Outdoor education (2nd edition). Englewood Cliffs, NJ: Prentice-Hall, Inc.
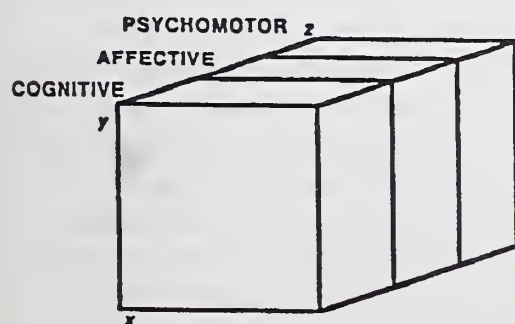
Figure 5.—Domains of learning.

Outdoor Wilderness Education—A Leadership Curriculum

Edward O. Raiola[1]

Abstract.—This study used an interdisciplinary approach to establish, test, and evaluate a curriculum for outdoor leadership education that is not specific in geographic suitability and is applicable to land- or water-based programs. A pilot test and evaluation of the curriculum based on the questionnaire results and review of literature was conducted to determine to what extent these educational objectives were actually achieved by the program of instruction. Analysis of data from a pre- and post-course, competency-based questionnaire, a student designed ranking-narrative tool, the Unity College Faculty and Course Evaluation form, and investigator observations showed that students had increased their levels of skill, competence, and knowledge related to the curriculum objectives after the completion of the course of instruction.

The issues of outdoor wilderness education and leadership have become a national concern, both within the profession and from organizations employing outdoor program services. The past decade has seen extraordinary growth in the use of the outdoors for educational, recreational, and human service programs. Increasing numbers of people have found the outdoors a wonderful place to arouse sensitivity, learn practical living skills, shape values, expand cognitive understanding, develop commitments, and strengthen personalities. Along with this increased demand for outdoor activities comes a need for highly skilled leaders and administrators.

If the quality of leadership in the outdoors is to continue improving, the profession must work to develop theories and practices that are appropriate to such a goal. With this purpose in mind, this study proceeded to establish, test, and evaluate a curriculum for outdoor leadership education that was nonspecific in its geographic suitability and flexible enough to be applied to water-based or land-based programs. Respondents in the study included not only experts with higher education and field experience in outdoor pursuits, but also students who were leaders-in-training.

[1]Outdoor Recreation Department, Unity College, Unity, ME.

Methods

1. A questionnaire format was established consisting of a list of 30 objectives compiled from the literature review.

2. The questionnaire was submitted to a panel of five experts and to students enrolled in the pilot test of the curriculum, asking them to rate the importance of each objective in a course for outdoor leadership education.

3. A second questionnaire was developed and submitted to the panel of experts asking them to rate their preference (indoor or field classrooms) for teaching each of the 30 original curriculum objectives.

4. Data obtained from the experts and the students were evaluated. Whenever an objective received a combined panel and student rating of 80% or above, it was considered to be fundamental in guiding the development of the curriculum. In addition, the Mann-Whitney U-Test was used to determine if there were significant differences in the distribution of scores between panel members and students on the set of objectives.

5. The approved objectives, related readings, and personal interviews were considered in designing the curriculum.

6. A pilot test and evaluation of the curriculum was then conducted. Evaluation tools consisted of a pre- and post-course competency-based questionnaire, a student-designed ranking-narrative tool, the Unity College Faculty and Course Evaluation form, and investigator observations.

Curriculum Content

In designing the curriculum, the investigator sought to organize the content to provide continuity, sequence, and integration in order to reinforce each aspect and produce a cumulative learning effect. Certain elements emerged as organizing threads: concepts, including knowledge base, values, and specific skills and abilities related to outdoor leadership.

The leadership curriculum was divided into three sections: an introductory field experience of 7 days, the semester course of 15 weeks (where the majority of the teaching

took place in the classroom except for two short supervised field experiences lasting 3 days), and a final expedition of 9 days. The content of each of these sessions included most of the suggested curriculum objectives (see appendix A), but had to be flexible and allow for variable factors such as group progress, weather, terrain, and seasonal changes.

Results

Results based on the findings of the study, within the limitations set forth, are as follows:

1. No significant difference existed between the responses of panel members and students in terms of the ranking of importance of the curriculum objectives for outdoor leadership education.

2. The panel members and students were in agreement on the 16 most important objectives to be included in a curriculum for outdoor leadership education (appendix B).

3. Indicators of preference for teaching specific curriculum objectives indoors or outdoors were directly related to applicability of each topic to the environment. Curriculum objectives which were more directly related to working outdoors, such as map and compass use and low-impact camping practices, were preferably taught in the field, whereas theoretical or academic objectives, such as legal liability or group process, were earmarked as indoor topics. In addition, indicators of preference for teaching curriculum objectives indoors or outdoors were affected by variables such as group size,

weather, geographical locations, student-instructor ratios, and equipment limitations.

4. Field experiences were considered an essential component of outdoor leadership education by panel members and students. This investigator's observations and the responses to the evaluation tools substantiate the importance of field experiences as catalysts for growth and development of leadership skills.

5. The analysis of data obtained from the evaluation tools, student comments, and investigator observations indicated that the students had increased levels of skill, competence, and knowledge related to the curriculum objectives after the completion of the course of instruction.

Implications/Recommendations

From these results, this investigator makes the following recommendations:

1. Students coming into this curriculum should not requirebasic instruction in wilderness skills at the level of tent-pitching, stove lighting, or packing their backpacks. While teaching such skills is a part of the curriculum, it is not desirable for leaders-in-training to require introduction to general camping skills.

2. In some settings a two-semester format for the curriculum might be more appropriate than the time frame described in this study.

3. A follow-up study could be completed using the same evaluation tools to support or further demonstrate the effectiveness of the curriculum.

4. A follow-up study could be completed to explore gender differences in outdoor leadership education.

5. The content of this curriculum should be considered in the development or establishment of any standardized outdoor leadership certification program.

6. Individuals undertaking any future study or application of this curriculum are encouraged to consider optimal group size for the field experiences.

Discussion

When considering outdoor leadership development, it is helpful to distinguish between "training" and "education"; such a distinction illuminates the necessary interplay of skill mastery, in the technical sense, and the evolution of a larger context of knowledge with which to practice skills. If one thinks of training as the learning of techniques, whether it be fire-making, rope-handling, or map and compass navigation, one can view education as the process through which the student comes to understand the appropriate use of technique, as well as the implications of such use.

The education and training of sensitive outdoor leaders/educators have some important social and political implications for the use of and general attitudes toward the natural environment. Competent, well-educated outdoor professionals can help change the general public's behaviors and attitudes toward the environ-

ment and thus minimize environmental degradation through use. Highly skilled and aware outdoor leaders are a major resource for the re-education of the increasing numbers of people who are discovering the outdoors.

By creating outdoor experiences that embody values of preservation/conservation of nature and promotion through role-modeling of a nonabusive relationship with one's environment, an outdoor leader has a unique opportunity to shape the practices and attitudes of the public.

Through this framework, the need for a balance of training and education in the preparation of outdoor leaders has become self-evident. One also may become aware that the development of a good leader, as of a good writer, psychologist, or teacher, is an ongoing process. Optimally, the curriculum provides a student with the fundamental skills and knowledge for beginning his or her maturation in the field of endeavor.

For further information regarding the analysis of data, procedures, and the implementation of this curriculum, please contact the author.

Appendix A—Content of Outdoor Leadership Curriculum

Based on the consensus of objectives, the review of the literature, and the limitations set forth, the following nine elements emerged as preferred content of the outdoor leadership curriculum.

1. Leadership style

This element of the curriculum identifies topics, information, and practices which will enhance the knowledge, skills, and abilities of the student to develop his/her own leadership style.

Topics:

   a. General knowledge related to leadership styles.

   b. Characteristics of the leader.

   c. Responsibilities of the wilderness leader.

2. Judgment/objective-subjective

This element serves to identify topics, information, and practices which will help students to develop their own judgment and decisionmaking ability for outdoor leadership.

Topics:

   a. Characteristics of sound judgment.

   b. Potential problems of poor judgment.

   c. Process for learning sound judgment.

3. Trip planning and organization

This element identifies topics, information, and practices which will help students to enhance their knowledge, skills, and abilities in program planning, organization, and evaluation for outdoor leadership.

Topics:

   a. Common elements of program planning.

   b. Considerations of activity and site selection.

   c. Evaluation tools for outdoor programs.

   d. Common elements of successful wilderness programs.

4. Environmental issues

This element identifies topics, information, and practices which will enhance the student's skills and abilities in minimum-impact practices and environmental considerations that affect wilderness programs.

Topics:

   a. Philosophy of minimum-impact practices.

   b. Common problems of overuse.

   c. Minimum-impact practices and procedures.

   d. Common hazards in wilderness trips.

   e. Procedures and practices to minimize hazards.

5. Risk management

This element identifies information and practices which will enable students to become aware of the safety and legal issues associated with outdoor leadership and to develop emergency plans and procedures.

Topics:

   a. Common risks in outdoor programming.

   b. Steps in risk management for outdoor programming.

   c. Legal liability and standard of care.

   d. Release forms and acknowledgment of participation.

   e. Emergency policies and procedures.

6. Instructional principles

This element identifies information and practices which will enhance the knowledge and abilities of students to teach and present material in an outdoor setting.

Topics:

a. Introduction to learning styles.

b. Elements of experiential education.

c. Opportunities and limitations on instruction in a setting.

d. Teaching techniques for wilderness programming.

7. Navigation

This element identifies information and practices which will help students to enhance their knowledge, skills, and abilities in map and compass use for outdoor leadership.

Topics:

a. Topographic map symbols and uses.

b. Compass use.

c. Use of map and compass.

d. Planning routes.

8. Group dynamics

This element identifies topics, information, and practices which will help students enhance their knowledge, skills, and abilities to work with small groups in outdoor settings.

Topics:

a. Techniques for communication and problem-solving.

b. Common interpersonal issues associated with wilderness programs.

c. Opportunities and limitations of problem-solving with small groups in an outdoor setting.

9. Nutrition

This element identifies information and practices which will help students to enhance their knowledge, skills, and abilities related to menu planning and preparation for outdoor programming.

Topics:

a. Components of a balanced diet.

b. Practical nutrition for wilderness leaders.

c. Organizing and planning food for outdoor programming.

d. Techniques for food preparation in the field.

Appendix B—Ranking and Mean Score of Consensus Objectives of Curriculum for Outdoor Leadership by Panel Members and Students

Rank	Mean	Objective number	Topic
1	3.8	4	Experiences leading groups.
2	3.6	7	Knowledge of subjective and objective dangers.
3	3.5	12	Knowledge of judgment/decisionmaking process.
4	3.5	29	Information and theory that relate to the leader's ability to plan, prepare, and execute an activity with minimum impact on the environment and without injury to the participants.
5	3.5	11	Participation in an 8- to 10-day field component.
6	3.4	13	Knowledge and theory of common hazards in wilderness settings.
7	3.3	17	Knowledge of environmental factors that affect wilderness trips.
8	3.3	27	Legal liability, standard of care, negligence.
9	3.3	6	Knowledge of programs itinerary.
10	3.3	20	Low-impact wilderness use practices.
11	3.3	9	Information and knowledge of teaching techniques.
12	3.3	30	Use of map and compass.
13	3.2	3	Knowledge and theory of program planning.
14	3.2	5	Knowledge and theory of risk management.
15	3.2	8	Knowledge and theory of good oral communication.
16	3.2	14	Presentation of techniques for learning specific technical motor competencies (i.e., wilderness first aid, climbing, kayaking).

Perceived Changes in University Student Knowledge and Opinions Concerning Wilderness Management Issues

Karen E. Cathey and Michael H. Legg[1]

Abstract.—Wilderness area management issues were used to test the hypothesis that level of knowledge and opinions regarding wilderness area management policies are related. Scales were developed for measuring opinion on wilderness management, and opinion scale scores were correlated with knowledge levels. Using a pretest/posttest design, opinions of students in freshmen classes were tested before and after reading an informative paper on wilderness management. Results show that students attending Stephen F. Austin State University are predominantly classified as "urbanist" in wilderness values and tend to be pro-wilderness management in attitude. Knowledge was found to be positively related to opinions concerning management of wilderness areas.

In 1984, the Texas Wilderness Act created five new wilderness areas in the eastern portion of the state of Texas. Prior to this time, the only wilderness in Texas was Guadalupe Mountains National Park, about 700 miles away in the far western portion of Texas. The five Texas wilderness areas were created only after several years of struggle by environmentalists and court action. The areas are still involved in legal controversy concerning timber harvest to control southern pine beetle and other management issues.

Management of wilderness areas is a multi-faceted issue. There are reasons to support or object to each management approach. Some of the management issues faced are: wildlife management; recreation impact; restoration of impacted land; protection of the area from natural catastrophes such as wildfire or pests and disease; and the exclusion (or not) of exotic species. All must be managed in a manner that does not disturb the essential emotional and inspirational connotations of wilderness (Hendee 1985). Before any attempt can be made to modify behavior, we must determine what the population knows and how they feel about present policies (Borden and Schettino

1979, Watson 1985). It is likely that managers underestimate visitor acceptance of some behavioral controls. Often visitors feel that a minimal amount of management action is necessary to ensure an enduring resource (Watson 1985). Beard's (1974) study supports this. He found a lack of knowledge about the uses of National Parks and wilderness areas among the Sierra Club members tested.

Objectives

The objectives of this study were to determine the knowledge and opinions of university students concerning wilderness management policies of the USDA Forest Service, and determine the extent of and relation between the change in knowledge and opinion that occurred following their reading of unbiased informative material on the issue.

Methods

The study surveyed students (n = 202) attending Stephen F. Austin State University in Nacogdoches, Texas. Introductory sociology, psychology, geology, forestry, and botany classes were selected because of the general nature of their content and the wide range of academic majors enrolled in them. Located in deep east Texas, Stephen F. Austin

State University is in an area where much of the economy is based on the timber industry. Within a 100-mile radius are Upland Island and Turkey Hill (Angelina National Forest), Indian Mounds (Sabine National Forest), Little Lake Creek (Sam Houston National Forest), and Big Slough (Davy Crockett National Forest) wilderness areas. The controversy concerning the establishment and future management of these wilderness areas has received extensive media coverage. Environmental activists, including Earth First members, have led protest rallies on the Stephen F. Austin State University campus. Students on campus were exposed to the issues of wilderness management numerous times during the period immediately preceding the study.

Design

As per Isaac and Michael (1981), the Randomized Solomon Four Group Design was applied. According to this design, the total tested population was divided into four major groups. Group I was given the pretest, the treatment, and the posttest; Group II was pretested and posttested, with no treatment in between. This is the control group. Group III was given only the treatment and the posttest. As a control on Group III, Group IV was given only the posttest. Thus the effect of the pretest, the treatment, and the

effects of maturation and history outside the treatment were isolated (Isaac and Michael 1981).

A questionnaire was developed which was used to determine participants' levels of knowledge concerning wilderness area management (table 1). An informational paper (the treatment) was written for this study to introduce the issues and explain the development of the controversy. Written in an informal style appropriate for college freshmen students, the paper was designed to answer each of the knowledge questions in the pretest questionnaire. Responses to duplicate questions in a posttest questionnaire were used to determine extent of change in knowledge after reading the papers.

A second set of questions and statements was developed to assess participants' opinions concerning wilderness area management policies (table 2). The questions were scored using a scale ranging from strong agreement (1) to strong disagreement (5).

The questionnaire was given during normal class periods. After the questionnaire was filled out and returned, the informational paper was passed out to Group I and the students were asked to read them at that time. Group II took the pretest then resumed regular class. Group III received the introductory explanation and was handed the paper to read while Groups I and II were

being tested. Posttests in Groups I through III were given 21 days after the pretest and/or treatment.

Analysis Techniques

One-way analysis of variance (ANOVA) and Pearson Correlation tests were administered to detect significance of demographic characteristics, trends and contrasts in information, correlation between knowledge and opinion, and homogeneity of responses. Duncan's Multiple Range test was administered to determine significant differences between cell means in one-way analysis. All tests were conducted at the 0.05 level of significance. When analyzing the difference between pretest and posttest responses, a 95% confidence interval table for Binomial Distribution was used (Snedecor 1976).

Opinion scales for wilderness area management were developed using methodology similar to that employed by Hendee et al. (1968). For this study, a modified version of Hendee's Wildernism Scale was employed to analyze participants' values concerning wilderness areas. In order to develop the Wilderness Management Scales in this study, statements that were obviously "for" or "against" management of natural resources were selected from the questionnaire by a panel knowledgeable in forest management. Gamma

statistics were computed for each statement (table 3). The gamma statistic ranged from -1.0 to +1.0; the higher the gamma, the better the chance that the response to a particular opinion statement would be indicative of a student's attitude concerning wilderness management. Gamma statistics on the 33 statements selected by the panel as clearly expressing opinions concerning wilderness area management ranged from 0.00224 to 0.99570. The minimum gamma was set at 0.70. Using this minimum gamma statistic as the criterion, 17 of the 33 wilderness area management statements were included in the Wilderness Management Scale (table 3).

Results and Discussion

Descriptive Characteristics

Among the 202 students who participated in the study, 91% were between 17 and 22 years old. The sex ratio was nearly even with 46% male and 54% female. Most of the participants were white (93%) with the remaining 7% either black, Spanish, or American Indian.

Over half of the students were freshman (57%), with the remainder evenly divided between sophomores, juniors, and seniors. Most of the participating students were residents of Texas (99%) and almost half came from cities with populations of 75,000 or more. Twelve percent of the participants or their parents were members of a conservation or an environmental organization. Only 6% had immediate family members employed within the forest industry.

When asked if they had ever visited a wilderness area, 76% responded affirmatively, but only 56% had visited one in the past 5 years. When asked to list the wilderness areas they had visited, only 5% of the total responses were, in fact, part of the National Wilderness Preservation

Table 1.—Percent correct pretest and posttest responses to knowledge questions.

Question	Pretest	Posttest
Where can wilderness areas be located?	10.2%	3.3%
How large must wilderness areas be?	56.7%	36.7%
How many wilderness areas are in Texas?	39.2%	66.8%
How much hunting is normally allowed in wilderness areas?	45.6%	60.0%
How many permits are required to enter and camp in wilderness areas?	27.8%	26.7%
How many wilderness areas in Texas are located in areas of virgin forests?	48.9%	50.0%

Questions		SA	A	NO	D	SD
				Responses		
Since wildlife will flourish without the help of man, no wildlife management need be practiced in wilderness areas.	Pretest	2.5	13.9	13.9	38.0	31.6
	G1T1	3.3	13.3	6.7	50.0	26.7[b]
	G1T2	6.7	16.7	10.0	46.7	20.0
Small areas should be cleared in wilderness areas to increase wildlife habitat.	Pretest	2.5	21.5	44.3	24.1	7.6
	G1T1	3.3	20.0	46.7	23.3	6.7
	G1T2	3.3	36.7	40.0	20.0	0.0
Disturbance in the forest is natural and the forest would not be the way it is if disturbances did not occur.	Pretest	11.4	53.2	21.5	10.1	3.8
	G1T1	6.7	53.3	20.0	16.7	3.3
	G1T2	10.0	63.3	16.7	10.0	0.0
Wildlife management techniques such as nest boxes, small clearings, planting of forage species, prescribed burning, and seeding of food patches should be allowed in wilderness areas.	Pretest	6.3	36.7	34.2	19.0	3.8
	G1T1	3.3	40.0	26.7	26.7	3.3
	G1T2	10.0	40.0	33.3	10.0	6.7
Wildfires should be extinguished as soon as possible on wilderness areas and no prescribed burning (low density controlled first set intentionally to clear underbrush or improve wildlife habitat) should be practiced.	Pretest	22.8	26.6	16.5	26.6	7.6
	G1T1	20.0	20.0	16.7	33.3	10.0
	G1T2	6.7	30.0	20.0	40.0	3.3
While wildfires should be controlled, prescribed burns should be allowed in wilderness areas.	Pretest	5.1	38.0	31.6	12.7	12.7
	G1T1	0.0	53.3	16.7	13.3	16.7
	G1T2	10.0	36.7	20.0	20.0	13.3
Wildfires should be restricted to small areas then allowed to burn themselves out in wilderness areas.	Pretest	1.3	14.1	20.5	34.6	29.5
	G1T1	3.3	13.3	20.0	43.3	16.7
	G1T2	3.3	16.7	26.7	33.3	20.0
Wildfires should be allowed to burn until they reach the edge of wilderness areas.	Pretest	2.6	5.1	14.1	32.1	46.2
	G1T1	6.7	6.7	10.0	33.3	40.0
	G1T2	0.0	10.0	16.7	36.7	36.7
No consumptive types of recreation, such as hunting and fishing, should be allowed in wilderness areas.	Pretest	11.4	19.0	24.1	32.9	12.7
	G1T1	16.7	16.7	16.7	43.3	6.7
	G1T2	13.3	13.3	10.0	50.0	13.3
Fishing, but not hunting, should be allowed in wilderness areas.	Pretest	6.3	29.1	17.3	32.9	12.7
	G1T1	10.0	16.7	16.7	43.3	13.3
	G1T2	3.3	26.7	20.0	36.7	13.3
Fishing and bow-hunting should be the only consumptive recreation allowed in the wilderness areas.	Pretest	2.5	8.9	25.3	49.4	13.9
	G1T1	6.7	3.3	20.0	46.7	23.3
	G1T2	3.3	20.0	16.7	43.3	16.7
No motorized vehicles should be allowed on wilderness areas under any circumstances.	Pretest	15.2	20.3	19.0	35.4	20.3
	G1T1	16.7	13.3	13.3	43.3	13.3
	G1T2	10.3	10.3	17.2	55.2	6.9
Motorized vehicles should be allowed on wilderness areas for emergency purposes only, such as to retrieve accident victims.	Pretest	28.2	51.3	7.7	9.0	3.8
	G1T1	10.0	50.0	13.3	13.3	10.0
	G1T2	10.0	63.3	16.7	6.7	3.3

(continued)

Table 2.—(continued).

Questions		SA	Responses A	NO	D	SD
Motorized vehicles should be allowed only in marked areas of wilderness areas, unless it is an emergency situation.	Pretest	27.8	46.8	12.7	8.9	3.8
	G1T1	23.3	46.7	16.7	6.7	6.7
	G1T2	13.3	60.0	13.3	13.3	0.0
Some unmotorized wheeled vehicles, such as bicycles, should be allowed in wilderness areas.	Pretest	8.9	51.9	16.5	15.2	7.6
	G1T1	6.7	50.0	26.7	6.7	10.0
	G1T2	13.3	56.7	26.7	0.0	3.3*
No restrictions should be applied to the use of motorized vehicles on wilderness areas.	Pretest	2.5	2.5	11.4	40.5	43.0
	G1T1	6.7	0.0	13.3	13.3	46.7
	G1T2	10.0	13.3	3.3	43.3	30.0
Wilderness areas should have marked trails for use by visitors.	Pretest	29.1	53.2	11.4	6.3	0.0
	G1T1	30.0	46.7	16.7	6.7	0.0
	G1T2	20.0	46.7	20.0	13.3	0.0
Wilderness users should be forced to use marked trails in order to avoid damaging the environment.	Pretest	12.7	35.4	16.5	31.6	3.8
	G1T1	13.3	36.7	20.0	23.3	6.7
	G1T2	20.0	23.3	36.7	16.7	3.3
Wilderness users planning to stay overnight should be required to pass some sort of test, such as the one required to obtain hunting permits in some states.	Pretest	3.8	22.8	39.2	25.3	8.9
	G1T1	6.7	10.0	33.3	6.7	13.3
	G1T2	6.7	20.0	43.3	30.0	0.0
Administrators of wilderness areas should be specially trained in the task of managing for wilderness.	Pretest	49.4	35.4	12.7	1.3	1.3
	G1T1	50.0	36.7	10.0	0.0	3.3
	G1T2	46.7	46.7	6.7	0.0	0.0
Specially trained personnel should patrol by foot or horse the wilderness area at all times for visitor protection.	Pretest	21.5	59.5	10.1	7.6	1.3
	G1T1	23.3	56.7	10.0	6.7	3.3
	G1T2	30.0	40.0	10.0	20.0	0.0
Trained patrols should have authority to write citations for certain things in wilderness areas (littering, cutting, live trees, leaving fires, etc.).	Pretest	41.8	49.4	6.3	1.3	1.3
	G1T1	26.7	56.7	10.0	3.3	3.3*
	G1T2	40.0	60.0	0.0	0.0	0.0
Only a certain amount of camping permits should be issued in wilderness areas to lessen user impact.	Pretest	18.2	41.6	23.4	15.6	1.3
	G1T1	16.7	40.0	20.0	16.7	3.3
	G1T2	23.3	43.3	23.3	3.3	6.7
Administrators of wilderness areas should have the authority to close campsites for periods of time in order to avoid sustaining irreparable damage to the area.	Pretest	26.6	55.7	12.7	3.8	1.3
	G1T1	20.0	60.0	13.3	3.3	3.3
	G1T2	33.3	56.7	10.0	0.0	0.0*
Administrators should have the authority to place signs near heavily impacted camping areas to divert traffic.	Pretest	16.5	67.1	15.2	0.0	1.3
	G1T1	23.3	63.3	10.0	0.0	3.3
	G1T2	30.0	43.3	23.3	3.3	0.0

Table 2.—(continued).

Questions		Responses				
		SA	A	NO	D	SD
Wilderness users should be allowed to alter the campsite by cutting back brush or building fire circles.	Pretest	2.6	23.1	5.1	51.3	17.9
	G1T1	3.3	13.3	3.3	50.0	26.7
	G1T2	3.3	20.0	20.0	43.3	13.3
Permits should be required of users who build a fire or camp overnight.	Pretest	14.3	64.9	10.4	7.8	2.6
	G1T1	16.7	60.0	10.0	3.3	6.7
	G1T2	20.0	53.3	13.3	13.3	0.0
Wilderness users should be allowed to gather only dead and down materials.	Pretest	12.8	64.1	12.8	5.1	5.1
	G1T1	16.7	56.7	6.7	6.7	10.0
	G1T2	20.0	50.0	30.0	0.0	0.0
Wilderness users should be able to camp or build fires wherever they want.	Pretest	1.3	6.4	9.0	56.4	26.9
	G1T1	3.3	0.0	6.7	53.3	33.3
	G1T2	0.0	6.7	13.3	63.3	16.7*
Campers in wilderness areas should be allowed to cut their own firewood at the campsite.	Pretest	2.6	10.3	20.5	46.2	20.5
	G1T1	3.3	13.3	23.3	30.0	26.7
	G1T2	6.7	13.3	20.0	46.7	13.3
Firewood should be cut only in certain areas by campers, then packed to the site.	Pretest	3.8	44.9	25.6	16.7	9.0
	G1T1	6.7	36.7	23.3	20.0	10.0
	G1T2	6.7	30.0	23.3	30.0	10.0
Firewood should be cut by rangers in wilderness areas then neatly stacked for use by campers.	Pretest	10.3	41.0	23.1	16.7	9.0
	G1T1	10.0	26.7	23.3	26.7	10.0
	G1T2	6.7	26.7	23.3	36.7	6.7
In wilderness areas, when campers leave their camp area, there should be no evidence that campers were there.	Pretest	44.9	43.6	10.3	1.3	0.0
	G1T1	43.3	36.7	13.3	3.3	0.0
	G1T2	40.0	46.7	10.0	3.3	0.0
In wilderness areas, litter should always be packed out, even if it is not yours.	Pretest	44.9	44.9	9.0	1.3	0.0
	G1T1	46.7	36.7	10.0	3.3	0.0
	G1T2	26.7	60.0	10.0	0.0	3.3
Wilderness area personnel should be responsible for all clean-up.	Pretest	9.0	7.7	11.5	51.3	20.5
	G1T1	10.0	10.0	6.7	50.0	20.0
	G1T2	6.7	6.7	10.0	63.3	13.3
Campers should be allowed to bathe and wash in streams of wilderness areas.	Pretest	6.4	14.1	20.5	41.0	17.9
	G1T1	3.3	20.0	13.3	43.3	16.7
	G1T2	6.7	23.3	16.7	40.0	13.3
Campers using biodegradable soap should be allowed to bathe and wash in streams.	Pretest	2.6	26.0	32.5	27.3	11.7
	G1T1	3.3	26.7	26.7	23.3	16.7
	G1T2	6.7	40.0	10.0	33.3	10.0
Bath and wash water should be dumped into a hole and covered with soil.	Pretest	6.4	21.8	57.7	11.5	2.6
	G1T1	6.7	33.3	36.7	13.3	6.7
	G1T2	10.0	36.7	40.0	6.7	6.7
Marked containers should be made available at the campsite for all unburnable refuse.	Pretest	14.1	60.3	20.5	2.6	2.6
	G1T1	16.7	56.7	23.3	0.0	0.0
	G1T2	13.3	56.7	20.0	10.0	0.0

(continued)

Table 2.—(continued).

Questions		Responses				
		SA	A	NO	D	SD
All unburnable refuse should be	Pretest	3.8	16.7	32.1	34.6	12.8
buried in holes at least 1 foot	G1T1	10.0	10.0	23.3	40.0	13.3
deep.	G1T2	3.3	6.7	33.3	46.7	10.0
All unburnable refuse should be	Pretest	25.6	55.1	16.7	2.6	0.0
packed out by the wilderness	G1T1	30.0	50.0	10.0	6.7	0.0
visitor.	G1T2	20.0	53.3	13.3	10.0	3.3
Radios, battery-powered TVs, etc.,	Pretest	11.5	52.6	14.1	14.1	7.7
should be allowed in wilderness	G1T1	10.0	46.7	13.3	16.7	10.0
areas, as long as they do not	G1T2	6.7	43.3	16.7	26.7	6.7
bother neighboring campers.						
Radios, for weather broadcasts,	Pretest	10.3	33.3	20.5	33.3	2.6
and walkie-talkies and other	G1T1	10.0	33.3	20.0	33.3	0.0
two-way communication devices,	G1T2	10.0	30.0	26.7	30.0	3.3
but no TVs, should be allowed in						
wilderness areas.						
Only rangers or patrols should have	Pretest	3.8	14.1	34.6	37.2	10.3
the authority to have two-way radio	G1T1	6.7	13.3	23.3	36.7	16.7
devices in wilderness areas; however,	G1T2	3.3	13.3	16.7	63.3	3.3
radios should be allowable to campers						
for weather broadcasts.						
Rangers should be the only ones with	Pretest	3.8	5.1	20.5	48.7	21.8
authority to have radios or walkie-	G1T1	6.7	3.3	20.0	50.0	16.7
talkies; they can inform campers of	G1T2	3.3	13.3	16.7	63.3	3.3
hazardous weather conditions.						
In wilderness areas, if an epidemic	Pretest	41.0	51.3	6.4	1.3	0.0
of insects or disease hits, the	G1T1	40.0	43.3	10.0	3.3	0.0
Forest Service should do all in	G1T2	30.0	53.3	13.3	3.3	0.0
their power to protect the forest.						

[a]Group I pretest scores = G1T1; Group I posttest scores = G1T2.
[b]Posttest scores in Group I that differed significantly from pretest scores are marked with an *.

System. Others listed included national parks, state parks, and local recreation areas.

General Knowledge Characteristics

The average scores on knowledge questions for pretests and posttests for each group are found in table 1. The average score of the 79 students taking the pretest was approximately 42% (8.4 out of 20). Group IV, which was given no pretest and did not read the informative papers, also had an average score of approximately 42%, which agrees with pretest scores. This indicates that nothing happened during the testing period that biased results of the posttest scores for the other three groups.

Group I students showed a significant increase in score on the posttest after taking the pretest and reading the informative papers. Pretesting has been shown to have a significant effect on amount of knowledge retained from treatment. The pretest serves as a form of preconditioning, making the information gained in the treatment "more important or pertinent" to the person (Wagar 1971).

No significant change was recorded in the average posttest knowledge score for Group II 21 days after taking the pretest. After reading the informative papers without taking the pretest, Group III's scores were not significantly different from the average Group I and Group II pretest scores.

Changes in Knowledge Concerning Wilderness Areas

The significant changes occurred on questions involving the number of

wilderness areas in Texas and knowledge that hunting is allowed in wilderness areas (table 1). There were significantly fewer correct responses after reading the informative paper concerning how large wilderness areas may be. Before reading the papers, 57% correctly responded that wilderness areas may be of any size. The response saying wilderness areas must be at least 5,000 acres increased by 20%. The Wilderness Controversy paper pointed out "...the area had to be 5,000 acres or of a size practicable to be managed as wilderness," and later expressed that the so-called Eastern Wilderness Act "...allowed the creation of numerous small (less than 5,000 acres) wilderness areas..." Apparently the 5,000-acre figure stuck in the students' minds, causing incorrect responses.

There was a significant increase in correct responses concerning the number of wilderness areas in Texas. The Wilderness Controversy paper pointed out there are five wilderness areas in deep east Texas that are involved in a debate over insect control, and then goes on to say that Guadalupe Mountain Wilderness in far west Texas is not involved in the insect management controversies. It is possible that this section of the paper was more pertinent to students because the much publicized controversy over control of the southern pine beetle in wilderness areas of east Texas was still in their minds. The correct responses to the question of how many wilderness areas are in Texas rose from 40% to 67% in the posttest.

There was a significant (20%) increase, from 40% to 60%, in correct responses on the true/false statement that hunting is allowed in wilderness areas. The paper states that while "wilderness areas are protected from most developments, hunting...(is) still allowed."

There was no significant knowledge change on the questions concerning whether permits are required to enter and camp in wilderness ar-

eas in Texas, whether or not Texas' wilderness areas are located in areas of federal land, and if they are virgin forests. Slightly fewer students (from 33% to 27%) knew that permits are

not required in Texas wilderness areas. This is probably because the wilderness reading suggested that use of permits might be a partial solution to reduce campfire outbreaks.

Table 3.—Gamma statistics for opinion statements used in construction of Wilderness Management Scale.	
Statement	Gamma statistic
Wilderness users should be able to camp or build fires wherever they want.	.966
Campers in wilderness areas should be allowed to cut their own firewood at the campsite.	.992
Permits should be required of users who build a fire or camp overnight.	.992
Wilderness area personnel should pick up litter whenever they see it and should have the authority to write citations for littering.	.982
Trained patrols should have authority to write citations for certain violations in wilderness areas (littering, cutting live trees, leaving fires, etc.).	.961
In wilderness areas, when campers leave their camp area, there should be no evidence that campers were there.	.947
To lessen user impact, only a certain amount of permits should be used in wilderness areas.	.941
Wilderness users should be forced to use marked trails in order to avoid damaging the environment.	.907
Marked containers should be made available at the campsites for all unburnable refuse.	.855
In wilderness areas, if an epidemic of insects or disease hits, the Forest Service should do all in its power to protect the forest.	.808
Wilderness users should be allowed to gather only dead and down material.	.798
All unburnable refuse should be packed out by the wilderness visitor.	.773
Since wildlife flourish without the help of man, no wildlife management need be practiced in wilderness areas.	.768
No restrictions should have the authority to close campsites for periods of time in order to avoid sustaining irreparable damage to the area.	.763
Administrators should have the authority to close campsites for periods of time in order to avoid sustaining irreparable damage to the area.	.751
Firewood should be cut by rangers in wilderness areas then neatly stacked for use by campers.	.743
Wilderness users should be allowed to alter the campsite by cutting back brush or building fire circles.	.702

In the pretest, only 7% knew that wilderness areas can be located only on federal lands. The Wilderness Controversy paper states that "...the Wilderness Act was passed by Congress with the express purpose of establishing a National Wilderness Preservation System on federal lands..." There was a nonsignificant decrease in correct answers with 83% continuing to believe that wilderness areas could be on both federal and state lands.

Almost half (43%) of the students in Group I believe that wilderness areas in east Texas were located in areas of virgin forests, even though the reading clearly says that in east Texas, the wilderness areas are on "...land that had been logged and farmed for years before being restored to forest..." Posttest responses on this true/false question were 50/50, suggesting a high level of guessing.

Discussion and Opinion of Responses

Opinion Responses Toward Wilderness Management

Wilderness opinion statements covered a wide variety of subjects: protection of the wilderness; responsibility of the user toward the resource and other users; and the authority of administrators (table 2). In general, the students thought that the wilderness resource should be protected from natural catastrophe. While most agreed that disturbance in the forest is natural (43% agreeing, 34% neutral), they felt that epidemics of insects and disease should be controlled immediately (92%). This attitude of protection was also reflected in the statements regarding control of fire.

The students felt that fire was bad for the forest and that neither wildfire nor prescribed burning should be allowed in wilderness areas. This attitude is probably a hold-over from

"Smokey the Bear" and other wildfire campaigns. There were no significant changes in opinions after reading the papers, even though prescribed fire objectives were mentioned.

Protection of the wilderness resource from damage due to overuse was also agreed upon. Since solitude is an integral part of the wilderness resource (Hendee et al. 1968, Roggenbuck and Watson 1985), statements concerning radios and televisions were added to the opinion survey. Results of the pretest showed that most agreed that radios and televisions should be allowed in wilderness areas, as long as other campers are not disturbed. Whether or not to disallow television in wilderness areas reflected mixed emotion, with 44% agreeing and 36% disagreeing. Most, however, thought that rangers should not be the only persons allowed to use two-way radio devices.

Most participants disagreed with indiscriminate use of streams for washing and bathing. When asked opinions about bathing and washing with biodegradable soap only, opinions were mixed. However, most were neutral or agreed that bath and wash water should be dumped in a hole and covered with soil.

The opinion that wilderness areas should be protected from litter and that concerning care of unburnable refuse was strong. Students felt wilderness area personnel should pick up litter when they see it, but that it was not an administrative responsibility. Almost all the pretest students agreed that wilderness area personnel should have the authority to write citations for littering; after reading the papers there was a significant change in this opinion, moving the average more toward strongly agree.

It is interesting that, contrary to provisions in the Wilderness Act, 74% of the pretested students felt that marked containers should be made available at campsites for disposal of unburnable refuse. In the

event that there was no container available, most felt both litter and unburnable refuse should be packed out by the user, with 90% agreeing with packing out litter, and 80% agreeing with packing out unburnable refuse. It was the overall opinion (89%) that no-trace camping should be practiced.

It was definitely agreed that well-trained administrators should have the authority to divert use from heavily impacted camping areas and be allowed to close sites for periods of time to avoid sustaining irreparable damage to the site. It may also be noted that while most of Group I definitely agreed (80%) with closing impacted sites in the pretest, after reading informative papers, the number changed significantly, rising to 90%, with the remaining 10% neutral.

Seventy-nine percent felt authority of administrators should include requiring permits to build fires or camp overnight. In areas where permits were required to camp or build fires, it was agreed that the number could be limited to lessen impact. After reading the informative papers, students' opinions changed significantly from disagreement toward neutral for the statement that users should be allowed to build campfires anywhere they want.

Most students felt that campers should not be allowed to alter the campsite by cutting back brush or building fire circles. Instead of cutting firewood at the campsite, it should be packed to the site, or only dead and down material gathered at the site. Most thought it might be a good idea for rangers to cut firewood for use by campers.

Opinion leaned toward disagreement with the statement that small areas should be cleared for wildlife. However, in another statement that wildlife management "...such as nest boxes, small clearings, planting of forage species, prescribed burning, and seeding of food patches..." should be allowed, 65% agreed and only 14% disagreed.

Conflicting opinions were also expressed concerning consumptive forms of recreation in wilderness areas: 30% agreed with banning hunting and fishing, 46% disagreed. Thirty-five percent agreed and 47% disagreed with fishing but not hunting. The only statements that got large numbers of agreeing students were those allowing fishing and bow-hunting only (63% agreed) and fishing and hunting at all times for food consumed on premises only, with 56% agreeing.

A majority (72%) of the students felt that wilderness areas should have marked trails for use by visitors. When asked whether users should be forced to use trails to avoid damaging the environment, many (65%) agreed.

Responses to statements concerning motorized vehicles in wilderness areas showed that students definitely agreed that there should be some restrictions, but sentiment was mixed regarding banning all motorized vehicles (36% agreeing, 45% disagreeing). Most of the students felt that motorized vehicles should be allowed outside marked areas during emergencies only. It is interesting to note that most thought unmotorized vehicles, such as bicycles, should be allowed in wilderness areas and that in the posttest, this opinion shifted significantly toward strong agreement.

Discussion of Scale Responses

As expected, there was a significant correlation between the scores on the Hendee's Wildernism Scale and the management scale (tables 4a and 4b). As Wildernism Scale scores moved toward "Wildernist," Wilderness Management Scale scores moved toward "anti-management." The more wildernist-purist participants' attitudes, the more they expressed opinions that limited management options and restricted authority of agency personnel.

Wilderness Management Scale Responses

The average Wilderness Management Scale scores for pretested groups was $1.797 \pm .435$. These scores fall between strong management to moderate management categories, indicating that students agree with management of wilderness areas. The scores on the Wilderness Management Scale reflect the opinion that wilderness areas should be protected from abuses and impacts by man. Whether or not an actual wilderness area had been visited had no significant effect on the scale score.

Wildernism Scale Responses

The scores on Hendee's Wildernism Scale averaged 5.1 ± 1.5 for pretested groups and 5.5 ± 1.2 for students taking the posttest. These scores are slightly more urbanist than scores of the Sociology class tested by Hendee et al. Students tested here fell into the categories Hendee listed as an "Urbanist" or "Neutralist" attitude toward wilderness. This is not surprising since a majority of the students tested came from cities with populations of 75,000 or more.

Average scores for Hendee's

Wildernism Scale were compared by students' majors. The three majors lowest on the Wildernism Scale were Business, Education, and Fine Arts. These three fall into the category Hendee calls "Urbanist." The two highest majors were Science and Math and Applied Arts, falling into Hendee's "Neutralist" category. Forestry students had the largest range: 4.289 ("Urbanist") to 6.781 ("Weak Wildernist").

When the adapted Wildernism Scale scores were tested against descriptive variables, the only significant descriptive characteristics were belonging to an environmental or conservation organization and seeing a clearcut. Both variables caused the scale to rise toward "Wildernist." Whether or not a student had visited a wilderness area had no significant effect.

Conclusions and Recommendations

The scores on the pretest of this study reveal that underclass students at Stephen F. Austin State University have low knowledge levels concerning wilderness area management. Students' scores concerning wilderness area characteristics were also

Table 4a.—Categories of responses on Wilderness Management Scale.

Scale	Very strong mgmt. (0-1.5)	Strong mgmt. (1.5-2.0)	Moderate mgmt. (2.0-2.5)	Weak mgmt. (2.5-3.0)	Neutralist (3.0-4.5)	Anti-mgmt. (4.5+)
Wilderness Management Scale	N=5 6.3%	N=12 15.2%	N=49 62.0%	N=12 15.2%	N=1 1.3%	

Table 4b.—Categories of responses of Hendee's Wildernism Scale.

Scale	Urbanist (1.0-5.4)	Neutralist (5.5-6.4)	Weak wildernist (6.5-7.4)	Moderate wildernist (7.5-8.4)	Strong wildernist (8.5-9.0)
Pretested students	N=42 53.2%	N=28 35.4%	N=7 8.9%	N=2 2.5%	N=0
Sociology class tested by Hendee	N=4 8%	N=23 46%	N=19 38%	N=2 8%	N=0

low; however, students were very opinionated in their feelings about management policies in wilderness areas. The consensus was that wilderness areas should be managed and protected from impact by man, fire, insects, and disease. The responses also revealed that students do not understand that the forest is a dynamic entity. The opinions of students seem to be based on very limited knowledge and misinformation.

The lack of knowledge of the students leads to the following recommendations:

1. A greater effort must be made to inform the public of changes made in response to criticism.

2. Information and education programs should be instigated explaining the reasoning behind management policies.

3. Immediate use of informational programs to interpret the forest as an ever-changing ecosystem.

4. Programs which confront particular issues in natural resource management should be constructed.

Acknowledgments

Literature Cited

Beard, E. R. 1974. The state of communication with an environmentalist group regarding forest land-use management. Nacogdoches, TX: Stephen F. Austin State University. 64 p. Unpublished M.S. thesis.

Borden, R. J.; Schettino, A. P. 1979. Determinants of environmentally responsible behavior. Journal of Environmental Education. 10(4): 35-39.

Hendee, J. C.; Catton, W. R., Jr.; Marlow, L. D.; Brockman, C. F. 1968. Wilderness users in the Pacific Northwest—their characteristics, values, and management preferences. Res. Pap. PNW-61. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 92 p.

Hendee, J. C. 1985. Wilderness: important legal, social, philosophical and management perspectives. In: Proceedings, Wilderness and natural areas symposium; 1985 May. Nacogdoches, TX: Stephen F. Austin State University, School of Forestry.

Isaac, S.; Michael, W. B. 1981. Handbook in research and evaluation. San Diego, CA: Edits. 234 p.

Roggenbuck, J. W.; Watson, A. E. 1985. Visitor needs and user impacts. In: Proceedings, Wilderness and natural areas symposium. Nacogdoches, TX: Stephen F. Austin State University, School of Forestry.

Snedecor, G. W. 1976. Statistical methods. Ames, IA: Iowa State University Press. 6 p.

Wagar, J. A. 1971. Communicating with recreationists. In: Recreation symposium proceedings. Syracuse, NY: State University of New York: 161-165.

Watson, T. 1985. Recreation in the eastern wilderness: do we know what the visitors expect? In: Proceedings, Wilderness and natural areas symposium. Nacogdoches, TX: Stephen F. Austin State University, School of Forestry.

Pathways to Understanding

Tom Whittaker[1]

Abstract.—The majority of disabled people in North America are limited in their opportunities to achieve a meaningful place in the economic and social fabric of society. This is the result of attitudes held by both able-bodied and disabled segments of the community. These attitudes stem from an identity crisis, lack of education, and/or misguided attempts to help. The role of recreation in the rehabilitation process is examined with special reference to "situational groupings" that largely use the outdoors as a medium to build self-esteem within the disabled and create feelings of admiration and acceptance within a community.

At 21, Kyle Packer was a mouse. Stillborn by strangulation of the umbilical cord, Kyle was revived by the doctors; his life was saved, but at a cost. Although the rational part of his brain was spared, the part that governs gross motor function was a mess. The resulting spasticity twisted his limbs and affected his speech and ability to eat.

When I met Kyle, he was pushing his 54-pound wheel chair backwards with his inturned feet; with his head turned inward, he was as close to the wall as he could get. Although I often saw him on the ground floor of the Student Union Building, he was never to be seen on the main level—the social center of the campus.

This was Kyle's second year at Idaho State University. A social recluse, he lived a lackluster existence on the verge of flunking out of school. Afraid to eat in public or talk on the phone, he was racked with anxiety and stress.

What was it, then, that changed him from a social recluse to the university's Homecoming king? What motivated him to pull his sagging 0.98 grade point average at the end of his first year to a blazing 4.00 in his final semester; from a non-starter to being voted the Idaho Outstanding Student of the year by the Governor's Committee on Hiring the Handicapped? What changed him

[1]Cooperative Wilderness Handicapped Outdoor Group, Pocatello, ID.

from a listless individual with no clear vision or expectation of life to a $14,000 a year career man advocating independent living skills for a population he has special empathy for, the physically challenged?

To state the case simply, Kyle discovered how to have fun. It did not happen overnight. It was a process of discovery and experimentation, little by little, but with each experience his confidence grew, his self-image improved, his physical and psychological functioning strengthened. Kyle, for the first time, established an identity and a sense of belonging based on a real understanding of his abilities.

He became enthusiastic about his options in life and chances for success. Kyle achieved this by joining a self-help outdoor recreation group for the disabled. His involvement has taken him alpine skiing to the premiere resorts in the Western United States, rafting the Blue Ribbon white water rivers of North America, including a 3-week, 280-mile journey through the Grand Canyon of the Colorado River. He has been on 3-day horseback riding trips in Yellowstone National Park and has rock climbed and scuba dived. Not bad for a mouse!

This story is just one among many told in Pocatello, Idaho, home of the Cooperative Wilderness Handicapped Outdoor Group. This man has not only beaten the odds, he enjoys a lifestyle that is enviable.

Until stories of the disabled are personalized, we tend to ignore their problems and fail to recognize their triumphs. Thus, we have been unable to embrace the disabled in society.

The Economics of Disability

The economics of disability are staggering. President Reagan stated in his proclamation as of February 6, 1981, that "35 million disabled Americans represent one of our most under-utilized national resources." According to the 1970 census, the last time information about the handicapped was gathered on a national basis, results showed only 2 million of this population earn more than subsistence wages ($7,000+). This means that we support on welfare, in hospitals, homes, etc., more disabled people than the entire population of Canada.

Helga Roth stated in her article "The Federal Dollar in the Disability Field": the megabucks—a reported $70 billion in 1980—which are sometimes cited as expenditures in the disability field, are not found in the service programs but in the income maintenance/health insurance outlays. She goes on to say, "Only a study of individual state budgets could provide us with insights of how much the nation spends in the disability field" (Roth 1984).

The point I am lumbering toward is that an inconceivable amount of

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money ($70 billion) is dished out annually to the disabled in the various forms of social security. A further $2.85 billion is spent on vocational training and rehabilitation in various forms. Yet only 2 million disabled Americans earn subsistence wages. These figures suggest that present attempts to integrate the disabled into the fabric of American society are a miserable (for the disabled), costly (for the nation) failure for which we must, as concerned individuals, not only bear a portion of the expense, but also the responsibility.

American taxpayers no longer can afford to underwrite the special needs of such a large population group. However, we do need to support recreation programs that effectively complete the rehabilitation process of the disabled so they are no longer stereotyped as invalids. In order for them to successfully complete their rehabilitation, the disabled have to establish an identity gained in a supportive, caring environment. Once this has been achieved, they are far more likely to become contributing members of society by once more being excited about life's possibilities and ready to risk themselves in a work environment.

The solution to a problem of this magnitude is complex and not totally reversible. For many of the disabled, we will have to provide an extensive amount of care. However, of this population, 7 million could be working and are not (U.S. Government Printing Office 1981). The only way we can reduce this bill is to effectively place more disabled citizens in the work force.

With the emergence of so many successful lobbying organizations over the last decade, we, as professionals in sport and recreation, as educators, and as disabled individuals, have done little to produce an effective lobbying force that creates an identity and public awareness for the disabled. In a decade, Green Peace opened the world's eyes to the plight of whales and harp seals by appealing to our common sense.

Disabled people cannot become part of an ambivalent, uncaring society; the wraps must be taken off disability. Confidentiality is a double-edged sword which can be used to protect the individual. It can also be used by successive administrations as a smoke screen to obscure facts and abdicate responsibility.

Disability is not something to cover up or be ashamed of; it is something that needs to be confronted. Disabled people have to be encouraged to own their disability in order to surmount it. They do not need to like their disability, but they do have to like themselves. In order to do this they have to accept the reality of who they are, based on their gifts and abilities.

Vocational Rehabilitation/Health and Welfare, in Pocatello, Idaho, found that 59% of their clients placed by an extension service of the sheltered workshop terminated employment within 60 days (Special Workers Industries for Training 1986). These figures could have been significantly improved if the clients' recreational needs had been met as part of their training. Sport and recreation provide the motivation for handicapped individuals to become physically fit. This, in turn, makes them more resistant to illness, more energetic, and less likely to dysfunction once in a work setting.

At its most potent, sport and recreation can, and has, done much to change attitudes. These attitudinal changes take place at all levels within society. On an individual basis, it affects how the disabled perceive themselves and how they are perceived by others. These positive attitudinal changes then manifest themselves in the broader context of the institution, work place, community, and nation at large.

Independent government agencies, educators, and private organizations, for many years, have recognized the importance of recreation for the disabled. In 1981, the U.S. Department of the Interior Heritage Conservation and Recreation Service stated, "the importance of recreation to the handicapped person cannot be overstated. Because many handicapped persons are not able to work at regular jobs or are discriminated against in trying to get them, many are deprived of the chance to meet mental, physical and emotional challenges which the general population regularly experiences" (U.S. Department of Interior 1981).

However, when talking to Hal O'Leary, director of the world's largest ski program, he said "They [the Federal government] view what we do here as just frills." This is an attitude toward recreation and sporting endeavors that I have constantly heard voiced across the county by sport and recreation professionals.

On February 3rd, 1986, The American Academy of Orthopedic Surgeons (AAOS) issued a position statement stating:

> We feel that there is a desperate need for public education on the subject (recreation for the disabled)...the general public is either limited in its knowledge of these activities, or views such programs as frivolous or potentially harmful.

This attitude is not only prevalent among the general public, but also within the government bodies providing support services for the disabled.

The potential for the disabled to participate in recreational programs was great, according to a Canadian national study conducted in 1976. The study, which reported on the status of recreational services for the handicapped, demonstrated the low priority most municipalities and recreation professionals give to programming for special populations (Hutchinson and Lord 1983). To put this in perspective, in the United States, "There are 22 million people

who are not served or are under-served in recreation...which undermines health, rehabilitation, self-care, and fulfillment" (Special Recreation Movement 1986).

Although the mission statement of the Federal Department of Vocational Rehabilitation includes the provision of recreation opportunities as part of the socialization of a disabled person, a very small fraction of the annual $1.5 billion budget is spent on this provision. This reluctance of the federal government to spend money on recreation stems from two major areas of confusion. One is an apparent lack of understanding of what constitutes the human needs of the disabled. The second concerns confusing recreation with entertainment.

Let me deal with the second area first, as it is easier to clear up. Entertainment is a time-filler which is passive, largely unfulfilling, and, at best, amusing and mildly educational...a kind of mind candy. Recreation, on the other hand, "has come to be viewed as an emotional state or condition that flows from feelings of well-being characterized by feelings of mastery, achievement, exhilaration, acceptance (of self and others), success, personal worth, and satisfaction" (U.S. Department of Interior 1981).

Just as a bicycle and the Columbia space shuttle can be placed on a transportation continuum, entertainment and recreation may be legitimately placed on a continuum of leisure time pursuits. Entertainment, at one end, provides little lasting value to the human organization. At the other end is recreation—quiet or dynamic activities that produce a significant emotional response within the individual, leading to "enhanced physical and/or mental fitness, relief from daily stress, greater family solidarity (a family that plays together stays together) increased worker, and economic productivity" (U.S. Government Printing Office 1981). In short, a tool of great therapeutic and

educational value that has lasting effects on personal development.

The first area of confusion I mentioned concerns the apparent lack of understanding the government has for the human needs of this population and why they should provide money for "fun and games." John Nesbitt, editor of the Special Recreation Digest, 1986, and advocate for the disabled, stated in a letter to me that the present administration's attitude to recreation for the disabled "ranged from ambivalent to opposed." While sport and recreation professionals for the disabled are talking space shuttle, the people controlling the purse strings continually hear bicycle.

The government defines a "handicapped person" as "an individual who has a physical or mental impairment that limits one or more major life activities...also covered are mental or psychological disorders such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities" (U.S. Government Printing Office 1981).

Unlike other minorities, the disabled have no collective identity. Their grouping is determined by their eligibility for a certain type of social security. These groups, within the whole, cannot relate to one another, and more often than not, dislike being categorized together. Thus many of the physically challenged resent being grouped with people who possess profound intellectual and emotional disabilities.

This situation is further compounded by being inappropriately portrayed to society by well-meaning, but off-target attempts to assist. Many disabled feel that, although well intentioned, telethons with crying celebrities does not afford them the dignity and respect they need to become accepted by society. Others feel that by stamping out birth defects, an albatross is hung around the neck of the congenitally disabled. I know I will be accused of

hysteria if I start making comparisons, but the cynic in me cannot resist the thought that this country went to war against a man who wanted to produce a superior race in which everyone should have blue eyes and blond hair and march in step!

I am not drawing comparisons between the fund-raising tactics of the March of Dimes, or successive administration's failure to effectively address the disability issue and acts of genocide. What I am saying, however, is that no matter how well intentioned one is or how much good one does with the money one raises, one does have a responsibility for creating an inappropriate image, or in the case of government, a lack of identity, that may indirectly have devastatingly similar effects.

The problems facing the disabled are largely attitudinal and belong to both segments of society, the disabled and the able-bodied alike. Where attitudes of a nation are concerned, government needs to take the lead. The government, for the most part, is comprised of well intentioned but able-bodied individuals who need guidance and direction in order to make wise decisions.

Sport and recreation, after money and sex, is one of the most potent driving forces in our society. It has been shown, when used correctly, as in Kyle's case and thousands like him, that it can create a near miraculous change in an individual.

I came into this profession by accident or, more directly, through the windshield of a car, and thus had no preconceived ideas. My initial intentions were to fill a fun gap that obviously existed in my community for the disabled. Having worked in outdoor recreation for many years, I was committed to its value and could, if pressed, wax lyrical about its benefits. Yet, what I was witnessing was out of all context to my previous experience.

The activities I was involved with had not changed, but the population

had. It was as if I had been dishing out food to "fat rabbits" in an expensive restaurant and then went to work in an Ethiopian refuge camp. Food to satiated people is of little value; food to the starving creates incredible changes. Like food, recreation in itself, has no mystical connotations. We have these things in abundance to take or leave as we please. It is, therefore, easy for people who have identities intertwined with their careers, hobbies, income, social status, recreational interests, and family and friends to overlook the benefits recreation can bring to a person deprived of the things they take for granted.

Hans Selye M.D., considered by many the father of understanding stress in the human organism, stated, "the aim of human existence is to create and maintain an identity, express innate abilities and desires, remain healthy, have a purpose, be proud of oneself, and earn the respect of others" (Selye no date). He coined the term "Alteristic Egotism," which he considered an innate part of our makeup as a social animal and the source of all human motivation. Stated simply, this is a person's selfish desire to maintain him/herself by collecting wealth and power in the form of love and recognition of his/her fellow beings through constructive work.

By doing this, Selye believed, we also fulfill what we consider to be our purpose. He states emphatically that man must work. It is a biological necessity. If denied this vital need, the organism will atrophy and perish. "To function normally man needs his work as he needs air, food, sleep, social contacts, and sex."

What I had done, in my naivety, was produced a situation, through the C.W. HOG Program, in which the disabled individual could create a collective and personal identity. The collective identity was being part of a self-help group that did ordinary things in the wild outdoors, but for the disabled were considered ex-

traordinary. Within the safety of the group they learned to risk, experiment, be accountable, accept responsibility, cooperate, seek solutions, and undertake activities that once had seemed inappropriate or out of reach. In short, they learned to be creative individuals pursuing their vision with love and courage. By portraying themselves as dynamic individuals, they could then earn the admiration of a community and sublimate their need to work through its close, relative, high-quality, self-directed recreation.

Educators have largely bought into "mainstreaming" and "integration," which are both commendable as ideals or goals, but they need to be recognized as such. What is needed is a diverse number of vehicles that help achieve this process. My concern is that in our eagerness to embrace normalization, there is a danger of devaluing self-help groups that do much to facilitate this process by preparing the disabled and the community in which they wish to enter.

Alvin Toffler in his book "Future Shock" mentions conversations with Herbert Gerjuoy, a psychologist in the Human Resources Research Organization. He states that "situational groupings" will become the key to social services of the future by providing a supportive group of people passing through similar life transitions at the same time. He acknowledges that membership can be temporary, just long enough to help the person with their transitional difficulties. The speed that people pass through this transition will depend upon the situation, the depth of their involvement, and their personal needs (Toffler 1970).

Thus, by identifying with the specific supportive group, people undergoing the loss of a parent, in the transition of divorce, or experiencing the crisis of being a battered woman, will find appropriate help and support while they work through their problems. This concept not only recog-

nizes the professionally qualified experts but anyone who has successfully resolved a personal transitional crisis.

In the case of the disabled, the situational grouping can be either narrow in focus or embrace all disabilities. It recognizes the value of volunteer help, enjoyment, and pursuing personal interests in an open-ended and supportive atmosphere. Behavior is dictated by the peer group, not the administrator of the institution.

Although medical science has made enormous progress in the field of physical rehabilitation, most health-care institutions are unable to address the emotional rehabilitation of the disabled because it is time-consuming, complex, costly, and has to take place in the real world, outside of the confines of the institution.

The rehabilitation process all too often places a low self-expectation upon the disabled. They are encouraged to be independent but are given no strategies to create a new identity or break the dependencies gained as a result of their circumstances.

Not only do situational groupings take place in the real world, they are also very cost effective, requiring only a small, dedicated staff to administer these programs. Last year, on a $85,000 budget, the C.W. HOG program provided recreation for more than 500 different disabled individuals assisted by 1,300 able-bodied volunteers. Our program generated 8,011 man hours of recreational activities for a population that had virtually no provision 5 years ago.

Recreation tends to have a marked effect on human nature; as a result, people tend to shed their unreceptive attitudes that prevail when they are at work. Their convergent, task-oriented behavior is sublimated for a more human, caring nature. This is a time when people's internal processing systems are most receptive to new ideas and change.

If the able-bodied in a community can see the disabled lap-swimming,

playing water polo, weight-lifting, scuba-diving, sailing, skiing, rock-climbing, horseback riding, refereeing softball tournaments, fishing, hunting, making jewelry, or playing an instrument in an orchestra, their natural curiosity is often accompanied by feelings of admiration. This, in turn, creates attitudes of acceptance based on the reality, as opposed to cutesy poster kids and sympathy provoking manipulation.

Conclusion

There are several ways to solve the "Catch 22" in which this faceless group of individuals find themselves. Most important, perhaps, is for society to accept the responsibility of disability as a fact of life and accept the disabled as part of its fabric.

As educators, advocates, and support professionals, we are in the driving seat. It is up to us to help people realize integration is a goal, not a vehicle. It is our job to seek creative and realistic solutions for this process to be accomplished. The old adage "if you are not part of the solution, you are part of the problem" has never been more true.

Sport and recreation advocates for the disabled must form a powerful lobbying group to persuade the federal government to spend our money wisely. Until the disabled can effectively complete their personal rehabilitation, their dysfunction within the economic and social fabric of society will continue to be an expensive embarrassment to this nation.

In order to achieve integration, the government must be persuaded to embark on a massive program of education that prepares society and creates attitudes of acceptance. We have school systems, medical, public and private organizations, employee incentives, and a vast network of support professionals—the machinery is in place—let us use it! Legislation is all well and good, but grudging compliance to federal mandate

does little to help our cause, unless it is implemented with empathy. The government must understand the human needs of this population and realize that sport and recreation provide the motivation and confidence necessary for the disabled to break client-centered mentalities and take charge of their lives.

The most effective method of reducing the massive bill paid out in disability pensions is to place more people permanently in the work force. The federal government has to recognize the vital importance recreation plays in strengthening a person by creating the groundwork within themselves and within their community. Until motivational and attitudinal changes take place in our society, access into this country's economic and social fabric will be a hit-or-miss affair for the disabled.

All too often, for many traumatically disabled, the rehabilitation unit is a steam catapult and society the brick wall. Although we are very effective at hitting the wall, we have not yet achieved our aim of integration, or so current employment figures would suggest.

The provision of a supportive recreation group not only provides the identity that circumstance has taken away, but also provides a cushion between the institution and the real world. It softens the landing and provides a sense of belonging. Within such groups, individuals can practice skills and competencies, build self-esteem, become physically and emotionally robust, and, by so doing, create feelings of admiration and respect within the community they wish to access.

Finally, let us not confuse recreation and entertainment. This is not fun and games, and certainly not frills. It is the cornerstone of a two-way process that, when used correctly, can enrich a nation by changing attitudes and opening perceptual doors. Somebody needs to ask President Reagan what he would do if he couldn't ride horses and chop wood!

Further Reading

The Economics of Disability

Catalog of Federal Domestic Assistance for 1983. Available from the Office of Management and Budget. U.S. Government Printing Office. Washington, DC 20402. Cost $32 per year.

Disability and Work: The Economics of American Policy. Richard Burkhauser and Robert H. Haveman. The Johns Hopkins University Press. Baltimore, MD 21218.

Outdoor Programming

The Outdoor Programming handbook. Ron Watters. Idaho State University Press. ISU Student Union Outdoor Program Publication. Pocatello, ID. 1986.

COOPERATIVE WILDERNESS HANDICAPPED OUTDOOR GROUP (C.W. HOG): A Journey Into the Unknown. Tom Whittaker. Sports 'n Spokes. January/February 1984. Volume 9, Number 5. Page 8-11.

Literature Cited

Hutchinson, Margaret L.; Lord, John. 1983. Recreation Integration. Recreation Canada. Canada: Canadian Parks and Recreation Association.

Rehabilitation Programs. Special workers industries for training annual report. July/June 1986: 5.

Roth, Helga. The federal dollar in the disability field. Programs for the handicapped. Washington, DC: Clearinghouse on the Handicapped. Vol. 3 (May/June 1984): 3.

Selye, Hans. Stress without distress. J. B. Lippincott Co.

The Special Recreation Movement. 1986. Special Recreation Digest. Volume III.

Toffler, Alvin. 1970. Situational grouping. Future Shock. New York: Random House, Inc.: 383-385.

U.S. Government Printing Office. 1981. Handbook of selective placement of persons with physical and mental handicaps in federal civil service employment. 1981. Washington, DC: 1.

U.S. Department of Interior, Heritage Conservation and Recreation Service. 1981. The third national outdoor recreation plan.

Keepers of the Sacred Grove: Motivating and Empowering Resource Managers to Protect Wilderness Values

Michael H. Brown and Michael D. Freed[1]

Abstract.—Educational and psychological methods have been used in career development workshops and motivational training for wilderness managers. Training sessions have been designed to clarify and strengthen wilderness values and to address the stresses associated with preservation responsibilities. There is significant interest among resource managers in techniques for self-motivation and a need to integrate psychological literature with the needs and experience of resource managers.

In his 12-volume work, "The Golden Bough," Sir James George Frazer explained the strange rule of the priesthood which passed on the title of "King of the Wood" at the lake and the grove of Nemi in the Alban hills outside of Rome. This grove has been used since ancient times for worship of Diana the Hunter, and was immortalized by Virgil in the legend of the Golden Bough (Frazer 1980):

> The lake of Nemi is still as of old embowered in woods where in spring the wildflowers bloom as no doubt they did two thousand years ago...Here in the very heart of the wooded hills, the Sylvan goddess Diana had an old and famous sanctuary, the resort of pilgrims from all parts of Latium. It was known as the Sacred Grove of Diana Nemorensis, that is Diana of the Wood.

> The retirement of the spot and beauty of the landscape naturally tempted some of the luxurious Roman nobles to fix their summer residences by the lake. Here Lucius Caesar had a house to which on a day in early summer only two

months after the murder of his illustrious namesake, he invited Cicero to meet the assassin Brutus...Here Julius Caesar built himself a costly villa...Here, Caligula had two magnificent barges or rather floating palaces launched for him on the lake.

> So to the last, in spite of a few villas peeping out here and there from among the trees, Nemi seems to have remained in some sense an image of what Italy had been in the far-off days when the land was still sparsely peopled.

> In the sacred grove there grew a certain tree around which at any time of the day, and probably far into the night, a grim figure might be seen to prowl. In his hand he carried a drawn sword and he kept peering warily about him as if at every instant he expected to be set upon by any enemy. He was a priest and a murderer; and the man for whom he looked was sooner or later to murder him and hold the priesthood in his stead. Such was the rule of the sanctuary.

> The post which he held by this precarious tenure carried with it the title of King of the Wood (Rex Nemorensis), but surely no crowned head ever lay un-

easier or was visited by more evil dreams than his. For year in, year out, in summer and winter, in fair weather and in foul, he had to keep his lonely watch. The least relaxation of his vigilance, the smallest abatement of his strength of limb or skill of fence put him in jeopardy, grey hairs might seal his death warrant.

Sir Frazer used this myth to trace the ancient sources of magic and religion in early cultures. In this paper, we use the myth of Nemi as a metaphor for the needs of the "Keepers of the Sacred Grove." For indeed, today pilgrims still journey to the sacred groves. The parks and wilderness of our nation are attended by millions seeking relief from their urban lives (President's Commission on Americans' Outdoors 1987, Resources for the Future 1983). The keepers of the grove, today's resource managers and public servants, still protect these nature reserves, wilderness areas, parks, and gardens. Year in, year out, in summer and winter, in fair weather and foul, they keep their lonely watch. And at times, they must think that the least relaxation of the vigilance or smallest abatement of their strength and skill might put their resource in jeopardy.

But who will guard the guards? Who is working to protect the resource manager from burnout, devitalization, loss of self-esteem, and other perils of organizational life?

[1]Human Resources Consultant, Psychosynthesis Transpersonal Psychology, Springfield, VA; Recreation and Park Administration, Arkansas Tech University, Russelville, AR.

Who empowers the keepers of the sacred grove to keep the light, enthusiasm, and meaning alive in today's society?

Objective

This paper reports on educational and psychological methods used in career development workshops and motivational training for wilderness managers, particularly those in federal recreation agencies, the U.S. Forest Service, the Bureau of Land Management, the National Park Service, and others.

Methods

Over a 5-year period, from 1982-1987, career development workshops and motivational training programs have been offered to institutions and agencies throughout the United States and Canada by both authors. Over 450 participants have attended these seminars (appendix 1).

The training sessions have been designed to clarify and strengthen the core values of the individual and develop team motivations and behaviors. Whenever possible, the training sessions have been held in wilderness or natural areas. During these 3- to 5-day sessions, participants are taught to examine their wilderness values and inner emotional framework under the direction of a Human Resource Consultant and a Professor of Leisure Studies through the use of psychological techniques including reflective writing, introspection, dyadic and group interaction, relaxation techniques, stress management, visualization, and group problem solving.

Basic Questions

This work has posed four basic questions to resource managers in charge of the Wilderness Preserva-

tion System and other public lands in the United States.

1. Do resource managers stay in touch with their own wilderness values? What personal vision or sense of purpose drives them in their primary work? How can they retain their motivation in the face of relentless pressures from external forces to use wildlands for singular purposes?

2. Do resource managers articulate wilderness values to others in a clear and direct manner?

3. How can resource managers improve their communication skills so they interact in a positive way with other managers in their unit or agency as well as with external publics? How can they communicate their vision of the meaning of wilderness to others?

4. Last, and perhaps most important, how can today's resource managers help others, particularly wilderness and park users, to develop their own vision about the meaning of wild and natural lands?

Results

This work found a large population of resource management personnel with particular mid-career stresses related to their role as "keepers of the sacred grove." Part of the organizational mythology of land management agencies deals with the importance of the work of preservation. The dedication of many of these career employees to their task is well-known among the agencies. Yet, the stress of modern bureaucratic life

is interpreted against a mythic role of "keeper of the sacred grove;" hence, normal stresses are personalized rather than defocused and defused by stress management techniques and personal growth.

Through subjective reports by participants, the use of innovative methods for enhancing career development has been validated and affirmed. In a random sample of managers involved in career development and motivational training, more than 60% expressed interest in, or a receptivity to, further training.

Summary

Future research that will integrate psychological literature with the needs and experience of resource managers is recommended. From our small sample of participants, we have been able to document intense interest in techniques for self-motivation.

We view the importance of this work as being equivalent to "guarding the guards" of our natural heritage in their long struggle to keep wild areas "forever wild."

Literature Cited

Frazer, James George, Sir. 1980. The golden bough. London: MacMillon. (12 vols.)

President's Commission on Americans' Outdoors. 1987. Washington, DC: Island Press.

Resources for the Future, Outdoor Recreation for America. 1983. Washington, DC: Resources for the Future.

Appendix 1.—List of training workshop symposia.

Brown, Michael:
July 1982, Presentation at the Third Wilderness Psychology Group conference, West Virginia Univer-

sity, Morgantown, WV, "Wilderness Vision Quest."

July 1983, Wilderness Vision Quest: A Three-Day Backpacking Trip for Personal Growth. For Wilderness Program Directors from the USDA-FS, The Wilderness Society, National Wildlife Federation, Smithsonian Institute, American Rivers Conservation Council, West Virginia University, American Forestry Association.

October 1983, Third World Wilderness Congress, Forres, Scotland, two workshops, "Wilderness Vision Quest: Exploring the Frontiers of Inner Awareness and Wilderness Appreciation."

November 1984, Conceived and Convened the Twentieth Anniversary Celebration of the Signing of the Wilderness Act at the National Parks and Conservation Association, Washington, DC. Presentations by Michael Frome, USDA-FS, USDI-NPS, USDI-BLM, and The Wilderness Society, The Sierra Club, Congressman John Seiberling, Senator Gaylord Nelson, John Hender, Michael Brown "A Striving for Balance."

August 1985, Career Development Quest: A Three-Day Backpacking Trip for Professional Development, USDA-FS, Southeast Forest Experiment Station, Asheville, NC.

October 1985, Career Development Quest: A Three-Day Backpacking Trip for Professional Development, USDI-BLM and USDA-FS.

November 1985, University of Idaho, College of Forestry, Moscow, ID. Facilitated a meeting of their Board of Advisors called "A Quest for excellence;" facilitated a 2-day retreat for the Department of Wildland Recreation.

November 1985, three workshops for the Annual Meeting of the USDA-Senior Executive Service, Washington, DC, Development of the Management Corps: Vision as the Key to Productivity.

August 1986, University of Idaho,

College of Forestry, Moscow, ID, conducted a 4-day retreat called Wilderness Quest for High Potential, Low-Achieving Probationary Students; facilitated a 1-day team-building retreat for the Department of Wildland Recreation.

October 1986, Career Development Quest—A Three-Day Backpacking Trip for Professional Development, for USDA-FS.

November 1986, First Annual Meeting of Wilderness Managers, USDI-BLM, St. George, UT, "Being a Wilderness Manager: Problems, Challenges, Potentials."

December 1986, Meeting of Wilderness Managers, USDA-FS, Portal, AZ, "Being a Wilderness Manager: Problems, Challenges, Potentials."

Freed, Dr. Michael:

September 1983-November 1986, Federal Recreation Roundtable, Executive Secretary, planned and organized quarterly seminars for federal agency heads in Recreation, sponsored by George Mason University—speakers included: William PennMott (NPS), Roy Feuchter (USFS), Joyce Kelley (Defenders of Wildland), George Siehl (Library of Congress), Loren Frazer (President's Commission on Americans Outdoors), Derek Crandall (American Recreation Coalition), John Poulk (TRA).

June 1985, Environmental Education Interpretation Workshop, Port-of-Spain, Trinidad, West Indies, under contract to the Organization of American States and the government of Trinidad and Tobago, June 6-20.

October 1985, Skills and Methods for interpretation, National Park Service Interpretive Skills Level 3, Interpretive Training Workshop, Prince William National Park, VA, October 16.

November 1985, Continuing Interpretation, California Department of Recreation and Parks, Mott Training Center, Monterey, CA, November 12-15.

March 1986, Managing the Difficult

Employee, National Park Service, Supervisory Training, Harpers Ferry Training Center, WV, March 12.

May 1986, Advanced Interpretation, California Department of Recreation and Parks, Mott Training Center, Monterey CA, May 18-24.

May 1987, Environmental Education Natural Resources Management Basseterre, St. Kitts, West Indies, under contract to the Organization of American States and the government of St. Christopher Nevis, May 20-June 10.

July 1987, Advanced Environmental Education and Natural Resource Management Workshop, Port-of-Spain, Trinidad, West Indies, under contract to the Organization of American States and the government of Trinidad and Tobago, July 12-31.

Joy in Living in a Wilderness Milieu

Edward L. Leoni[1]

Abstract.—A wilderness environment offers unique opportunities for personal growth which may not be realized in more traditional treatment modalities. Moreover, nature cannot recognize defeat and, therefore, an improved self-image is not contingent upon competition outcome involving another person. Additionally, a wilderness environment can absorb cathartic self-expression which is viewed as a prerequisite for therapeutic outcome. A wilderness location also allows for the development of new behaviors, as the wilderness environment is free from the stimuli and cues learned in the routines of daily life.

Joy in Living is an experientially based program within a wilderness milieu developed on sound therapeutic principles including: acclimatization, catharsis, awareness, and behavioral contracts. A central focus of the Joy in Living model (JIL) is to encourage participant growth via the maintenance of present behaviors that lead to JIL, as well as the cultivation of new techniques for an improved joy in daily living.

Acclimatizing Activities

A well-established standard in group work is the development of group cohesion and rapport. Group trust can be accomplished with the aid of structured experiences offered in a sequential manner. The JIL model offers acclimatizing activities that encourage verbal and kinesthetic involvement. This is done in the initial phase of group development to build a strong unit capable of accepting personal challenges offered in the latter phases of the model. The lifeline activity is one such activity (see fig. 1).

Each participant completes a lifeline outlining and describing the high and low points of their past day, week, or year. Participants then choose a partner forming a dyad for discussion. If a person typically prefers being chosen, they are asked to choose a partner. In addition, each participant must directly, openly, and honestly ask their future partner to listen to the story of their life. Developing constructive communication skills and assertive behavior are encouraged in this model.

Catharsis

Creating a therapeutic environment may allow for the release of pent-up emotion. The JIL model suggests that catharsis activity is not therapeutic but rather a precondition for therapy that must occur before therapeutic intervention can actually take place; thus, participants are asked to further engage in activities that combine both verbal expression and kinesthetic release.

Awareness

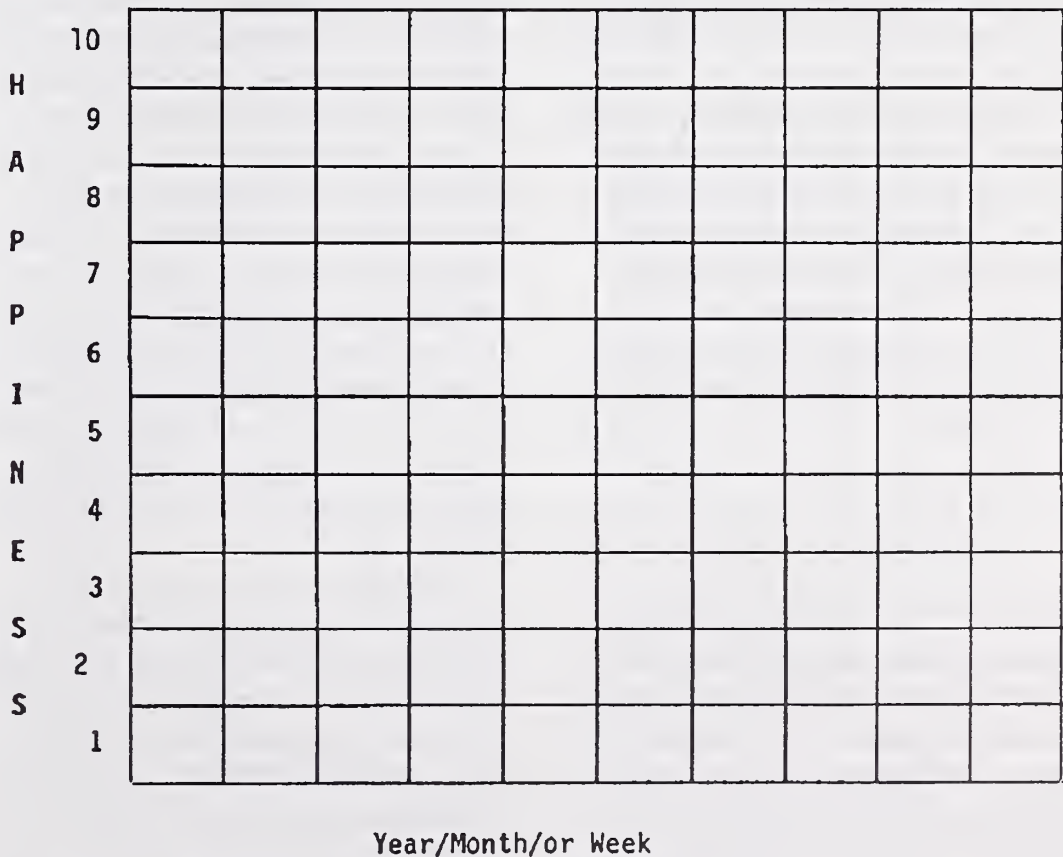Awareness activities provide participants with relevant information

Figure 1.—Acclimatizing activity, lifeline.

[1] Southeast Missouri State University, Department of Health, Physical, Education and Recreation, Cape Girardeau, MO.

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I'M SO EXCITED!    I JUST CAN'T HIDE IT!

      The Three A's to Better Living

   Awareness

       Assessment

           Action

How much of me am I?_____ %_____
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       F O R C E    F I E L D    A N A L Y S I S
       REAL SELF                        IDEAL SELF

Please list the 3 main obstacles/motivations:


1. _____


2. _____


3. _____
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Figure 2.—Awareness activity.

Enjoying life means taking responsibility for your body, mind and lifestyle, integrating all components in your healthful interest.

Successful lifestyle change depends on my ability to design a program for change. This program should include continuation of all those advantageous thoughts, feelings, and behaviors that were present prior to this workshop. This program should include but not be limited to the following list.

Exercise & Fitness	Nutrition & Diet	Leisure and Recreation
Goal	Goal	Goal
Objective	Objective	Objective
Social Involvement	Communication	Attitude
Goal	Goal	Goal
Objective	Objective	Objective

Figure 3.—Behavioral contract.

which is a prerequisite for behavioral change. Participants are asked to use a percentage to assess their present level of well-being, the degree to which they function in an actualized state.

In addition, participants are asked to list the greatest influences in their lives, both past and present. Additionally, participants must identify inhibitors and motivators that are involved in the search for true identity (fig. 2). Identity is defined as the gap which may exist between the real and ideal self.

Behavioral Contracts

The use of behavioral contracts represents the main purpose of the JIL model. Each participant must be able to develop and articulate a plan for maintaining positive behavior and improved Joy in Daily Living (fig. 3).

Conclusions

A wilderness environment offers therapeutic benefits not available in other more traditional settings; for example, catharsis can take place more readily outdoors because the natural environment can absorb the sound and energy displaced. Also, structured exercises are used to develop cohesion. A group can be challenged by an element found in nature and not against one another. One consequence is that any gains in self-esteem and group cohesion are realized without creating a loser or losing team, as nature cannot recognize victory or defeat!

A wilderness environment for most participants is a different environment than encountered on a daily basis. Thus, an outdoor laboratory, which is free from environmental cues and stimuli found in daily life, provides an atmosphere conducive for change.

The William Allen White Artist in Residence Program

Glen Kaye[1]

Abstract.—Restoration of the summer cabin of William Allen White in Rocky Mountain National Park has preserved a significant cultural resource and also enabled a visiting artists in residence program. Each summer, srtists are invited to stay in the cabin in exchange for creating a work that addresses the esthetic attributes of the park, processes of nature, historical features, or management issues. This program recognizes and promotes the role of artists and writers in shaping public attitudes about natural areas and communicating environmental values.

To students of conservation history, the role of artists and writers in shaping public attitudes about natural areas is an on-going part of today's environmental movement, even more vibrant than when a few perceptive men and women began to express fresh views of the world a century and a half ago.

When the staff of Rocky Mountain National Park found itself responsible for preserving the summer cabin of William Allen White, the National Register structure was quickly evaluated for adaptive use.

William Allen White, friend of former presidents from William McKinley to Franklin D. Roosevelt, was editor and owner of the Emporia Kansas Gazette from 1895 until his death in 1944. In the course of his career, he wrote 16 books, received the Pulitzer prize twice for his famous editorials, and served on the original Book of the Month Club committee. Much of his writing was done at his summer cabin in Rocky Mountain National Park where the family retreated each summer to escape the Kansas heat and enjoy the mountain life.

The connection between the writing excellence of White and the role of artists in communicating environmental values was a natural one, and so, use of the structure for an Artist in Residence Program was initiated.

The first step was to identify the restoration needs of the structure.

[1]Rocky Mountain National Park, Colorado.

Unused for a decade and in disrepair, the building needed extensive work to make it liveable. Carpentry, new wiring, and plumbing were essential, for although the Whites loved to "rough it," the building, as it stood, would not meet public health standards.

Second, the proposal needed evaluation by cultural resource specialists. Fortunately, the work needed to rehabilitate the structure was all indoors; the exterior could remain the same. Cultural compliance in hand, the next step was to obtain funding for the project. Donations were received from friends and associates of William Allen White, including the Chairman of the Los Angeles Times, family members, and the William Allen White Foundation of Lawrence, Kansas.

Interior architectural elements of interest, such as a beamed living room and stone fireplace, were preserved. Historic photos taken by the White family aided in keeping as much of the original appearance as was practical. Where the fabric was unseemly, as with a grease- and grime-coated raw wood floor, it was refinished.

After months of labor, and with new furniture on hand, the cabin opened in July of 1984 as quarters for visiting artists in residence. Appropriately, Dr. Del Brinkman, Dean of the William Allen White School of Journalism at the University of Kansas, resided as the first artist in residence. Each summer since then, 8-12

men and women have resided at the cabin, relaxed, and responded to the world of Rocky Mountain National Park.

The basic agreement with each artist is that in exchange for rent-free housing (everything but food is provided), the artist will produce a work that addresses the aesthetic attributes of the park, the processes of nature, historical features, or management issues. There is no further prompting. The choice is up to each individual. In effect, the staff deliberately steps out of the way to avoid coercion and see what chemistry occurs between the artist and the park. Negotiations are also made for gifts of art work from the residency program, such as paintings or photographs, which will become possessions of the federal government for use in park educational programs, exhibits, and publications.

Since its inception, the intent has not been to reach communicators of fame, but communicators of talent. Selected by invitation only, they have come from Washington, D.C., to California. They have included journalists and photographers, sculptors and oil painters, geographers and water colorists, anyone who can fit under the umbrella of the "communication arts." Most recently, cellist Eugene Friesen and pianist Paul Sullivan of the Paul Winter Consort resided in the cabin, preparing a musical score based upon the environmental sounds of Rocky Mountain National Park. In doing so, they typ-

ify the ideal of the program: out of the creations that appear, there will ultimately come works to shape the regional and national identity of Rocky Mountain National Park.

By putting a historic structure back into use, under the dictum that use is better for preservation than no use, the program also helps to preserve a significant cultural resource. It also commemorates the accomplishments and clear-thinking of William Allen White, a gratifying tripling of benefits.

The demonstration includes a bus trip to the White Cabin within Rocky Mountain National Park, a discussion of the building's restoration for adaptive use, and a visit with Ms. Elisa Decker of New York City, the current Artist in Residence.

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National Network for Environmental Education

Steven C. Kussmann[1]

Abstract.—A wealth of environmental education materials and programs have been developed and implemented over the last 15 years, but no central coordination and dissemination mechanism exists. The Alliance for Environmental Education is establishing a National Network for Environmental Education, consisting of interactive environmental education centers. Existing centers will be invited to join the Network. Where none exist, new centers, based at colleges and universities throughout the country, will be developed. These centers will provide expanded community-based environmental education programs aimed at both schools and the general public. The Alliance, working with a coalition of governmental, academic, environmental, consumer, and private sector organizations, will develop the centers and provide to them nationally coordinated management, information, and program support services.

The successful resolution of environmental management or resource use issues, including those affecting wildlands and wilderness values, requires an informed public. Education is needed to develop this understanding. To be effective, this educational process must include both "formal" programs planned for school children and "non-formal" programs directed to the public.

The need for and importance of environmental education has received prominent recognition by the recent Presidential Commission on Americans and the Outdoors. In 1986, this commission reported that: an "outdoor ethic" is a priority issue of the American public; people believe citizens should learn to appreciate the environment and respect it; and residents of each community should decide how best to address these issues in their location. Furthermore, in 1986, the United Nations called for partnerships between industry and environmental organizations to address pressing environmental issues.

The Alliance for Environmental Education

The need for partnerships and cooperation among all sectors inter-

[1]The Alliance for Environmental Education, Washington, D.C.

ested in environmental awareness and resource protection was already evident in the early 1970's. The number of organizations and associations dedicated to environmental education was growing rapidly. While each had a unique focus, many had common goals and used similar approaches. In 1973, in an effort to optimize resources and efforts, the Alliance for Environmental Education was created. Today, the Alliance represents the largest advocate for environmental education in North America—collectively totaling more than 12 million members of 34 affiliates. Through sponsorship of five major conferences, the Alliance has documented the needs and opportunities for environmental education and developed strategies on networking and information exchange. In 1986, the Alliance was awarded the National Wildlife Federation's Conservation Achievement Award for Education in the United States and was one of five organizations to receive the 1987 Chevron Conservation Award.

The Alliance believes that environmental education must be promoted to ensure that the American public is able to make informed judgments on environmental concerns, including resource management techniques, conservation, sustainable economic practices, development and protection of natural resources, energy use,

and other environmental problems. The Alliance supports programming that is balanced and fair and examines controversial issues from all sides. Advocacy groups, corporations, and government agencies benefit from an informed public, and education serves as a common ground for cooperation on environmental issues.

Networking: A National Strategy

A variety of environmental education programs has been developed by all segments of our society and can be found throughout the United States. Many are excellent independent efforts designed to educate a specific public about a particular concern or resource area. However, to maximize the potential of these efforts, a program is needed at the national level to facilitate existing and future environmental education programs. Recognizing this need for exchange and coordination, the Alliance has provided leadership in developing a "National Network for Environmental Education" by utilizing university-based outreach centers.

The Network is designed to better educate the public on environmental issues through programs for schools and the general public. Programs will incorporate resources from the local

and regional community as well as materials already available. Not only will these education efforts raise the level of public awareness and public discussion, but the Network will also strengthen community cooperation on local and regional environmental issues by opening channels of communication.

Tennessee River Valley Model

The Network approach to environmental education is modeled after an environmental/energy education network of university-based centers developed in the seven-state Tennessee River Valley region and sponsored by the Tennessee Valley Authority. The Tennessee Valley network offers teacher training, program development and dissemination, regional outreach services (such as technical assistance and workshops), and research opportunities. This network involves 13 universities and has trained 20,000 teachers during its 10 years of operation.

The Centers

Potential new centers will be college- or university-based and will demonstrate the potential to meet the Network's criteria. The Alliance has established that each center must, on an ongoing basis, provide its local community with (1) teacher training, (2) program development, (3) research, and (4) community outreach-environmental education services to be associated with the Network. Each Network center will develop locally the connections and communication mechanisms needed to carry out its responsibilities. Nationally, each center will be a link in a nationwide information and education exchange among universities, private organizations, government agencies, and corporations.

The Implementation Strategy

The initial phase of the program is being directed at establishing five Network centers in a 10-state region comprising Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. This area was selected because of its central geographic location and a demonstrated interest in the program from potential host universities. Local, regional, and national environmental education leaders and interested parties held a conference in April 1987 to help finalize details on establishing these centers. Development of the national support services mechanisms necessary to the Network also will be undertaken during the initial phase of the program. In late 1987, conferences were held in other regions of the country as part of a Network effort to finalize plans for establishing additional centers and to ensure the effectiveness of associated activities.

By 1997, the national network is expected to be fully operational. The undertaking will be a nonadvocacy effort, jointly developed and funded by the Alliance, local business and industry, state and local education, resource agencies, and the host universities. A minimum of five centers will be established each year. Centers will be associated with one another through the Network, and will interrelate based upon areas of common concern with the support of the Network. The Network will provide financial and support services to the centers. These services will include staff support, communications, conferences and meetings, interface, and issues analysis. The Network will work with existing regional and local environmental education centers and other national efforts consistent with the program.

The Network Management Committee, comprised of Alliance members and non-members and reporting to the Alliance Board of Directors,

will direct the ongoing operations of the Network. Expansion of the Network will be determined on an annual basis.

A general implementation strategy is outlined below.

1. The Alliance will hold regional organizational meetings of prospective sponsors and concerned organizations. The purpose of these meetings will be to focus on local needs, programs, partnership building, and organizational concerns. The meetings will also help publicize the Network.

2. Centers will be established at key colleges or universities. Candidate schools must meet specific criteria (as yet to be determined by the Network Management Committee) and will be selected by the Alliance.

3. Locally each center will provide environmental programs and serve as a technical assistance, information, and training resource center for both schools and the public. Nationally each center will be a link in a nationwide information and education exchange among universities, private organizations, government agencies, and corporations.

4. A national electronic bulletin board will be established to link those involved in the Network, Alliance affiliates, and interested outside organizations. The bulletin board will carry short notices of timely program and partnership information that will be fed into the system directly by center staff. All information will be accessible by computers nationwide.

5. The Alliance newsletter, "Alliance Exchange," will carry articles of long-term interest; for example, reports of program successes and failures and reports on national sponsors and affiliate programs. The "Exchange" will be distributed to each center, to Alliance affiliates, and to other interested organizations.

6. The Alliance and the universities will match funds for operations, staff, and programs on an equal basis. In succeeding years, universities will provide increasing proportions of their budgets; and within 5 years after initial funding, centers will operate independently of financial support from the Alliance. For continuous operation they will rely on various donations, contracts, and grants generated by the individual centers.